

**PREDICTORS OF RETIREMENT AND COPING IN RESPONSE TO DELAYED
RETIREMENT**

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RETIREMENT**

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SUMMARY

In the present study on the retirement intentions, 525 engineer alumni from a Southeastern university were surveyed. Consistent with the Kanfer and Ackerman (2004) framework of adult development and work motivation, I hypothesized perceived abilities-demands fit and needs-supplies fit, along with age, health and finances, would influence retirement intention. The potential negative effect of the recession on retirement plans led me to explore the coping behaviors of those who have modified their retirement timing in the past year. Age, finances, and abilities-demands fit were found to be related to retirement intentions, while no relationship was found between length of retirement delay and coping intensity. Implications and suggestions for future research are discussed.

CHAPTER 1

INTRODUCTION

The aging of the U.S. workforce, combined with labor force participation projections (see Warr, 1994), have spurred interest in the person and situation factors that influence retirement and withdrawal from the workforce (Kanfer & Ackerman, 2007). Past employment trends and projections have been indicative of a potential workforce shortage. In 2006, the Bureau of Labor Statistics reported that the percentage of the U.S. workforce over the age of 55 is expected to increase substantially, from 11.9% in 1996 to a projected 22.7% in 2016. In addition to the growing percentage of older workers, however, prior workforce participation rates of older workers showed a substantial decline in the sixth decade of life (e.g., from 71% for people aged 55 to 59 years to 52% for people aged 60 to 64 years in 2005; Toossi, 2006).

However, recently, economic conditions have substantially deteriorated in the U.S. (The Economist, 2008a). This dramatic economic downturn potentially makes past statistics invalid for predicting future retirement patterns. It may be that the offer of early retirement packages by organizations eager to cut costs will lead to an earlier than expected exodus of older workers. Or perhaps, contrary to previous predictions that older workers will continue to retire early, individuals may delay their retirement in light of any negative effects the recession had on their financial situation. At this time, it is unclear what effect, if any, the financial crisis will have on the workforce in the long term. Given the importance of being able to predict retirement in order to prepare for critical fluctuations in the workforce, one purpose of this study is to seek additional

determinants of retirement. Due to the likelihood that the economic downturn had a negative effect on the retirement plans of many individuals, I expanded the focus of the study to also investigate the coping strategies of individuals who must delay their retirement.

Study overview

Past predictions of a prospective workforce shortage served as the justification for a number of studies being directed toward identifying the key determinants of an individual's decision to retire from his/her job. Age, health and finances are three factors that have been repeatedly linked with retirement. Specifically, the results indicated that individuals who are older, in poor health, or satisfied with their expected retirement income are more likely to retire (Adams, 1999; Adams & Beehr, 1998; Adams, Prescher, Beehr, & Lepisto, 2002; Beehr, Glazer, Nielson, & Farmer, 2000; Dendinger, Adams, & Jacobson, 2005; George, Fillenbaum, & Palmore, 1984; Joulain, Mullet, Lecomte, & Prevost, 2000; Reitzes, Mutran, & Fernandez, 1998; Schmitt & McCune, 1981; Shultz, Morton, & Weckerle, 1998).

Although age, health and finances represent consistent determinants of the decision to retire, findings to date also suggested these factors only account for approximately 12 to 17 percent of the variance in the decision to retire (Adams, 1999; Adams, et al., 2002). Although inadequate funds may restrict retirement, psychological factors, such as the individual's motives, values and perceived person-environment (P-E) fit, may play a role in the retirement decision. One aim of this study is to investigate the role of these psychological factors in accounting for additional variance in retirement

intentions. Specifically, I propose that two dimensions of P-E fit, abilities-demands fit and needs-supplies fit (French, Rodgers, & Cobb, 1974), will also influence retirement intentions. Person-job fit is defined as the correspondence between the characteristics of the person and that of his/her environment (French, et al., 1974). Abilities-demands fit refers to the comparison between the abilities of an individual and the demands of his/her environment. Meanwhile, needs-supplies fit refers to the comparison between the psychological needs of the individual and the supplies offered by the environment. In accord with the model of adult development and work motivation proposed by Kanfer and Ackerman (2004) that will be described later, I predict that perceived abilities-demands fit will predict retirement. I expect that individuals who perceive the job demands as exceeding their abilities (i.e., negative discrepancy) will be more likely to retire than individuals who do not perceive such a discrepancy. Aside from abilities-demands fit, I also posit that needs-supplies fit will influence retirement. I expect that individuals who receive work rewards that are congruent with their motives will be less likely to retire. For example, I anticipate that a worker who has generative motives and perceives sufficient opportunity to fulfill these motives through training less experienced workers will be less likely to retire. Taken together, I hypothesize that these P-E fit dimensions will be negatively related to retirement.

The current economic crisis raises a host of new questions concerning work decisions and behavior. Will older individuals extend the time they remain in the workforce due to the economic downturn? How will older individuals cope with the reality of having to remain with their current employers past their previously expected

separation date? Analysis of the proportion of individuals working or looking for work revealed that between the 2001 recession and the five years that followed, the labor force participation rate of individuals over the age of 55 increased 4.7% (Mosisa & Hipple, 2006). However, the situation becomes more complex when the influence of the organization is also taken into consideration. While a workforce shortage during the 1980's left employers increasingly reliant on older workers, the recession that began in 1990 led organizations to implement cost-cutting measures including offering early retirement packages to older workers (Herz, 1995). Early retirement windows are often used to reduce payroll costs during financially difficult times, such as periods of recession or unfavorable business conditions (Bell & Marclay, 1987). An older worker may be more likely to retire when presented with an early retirement package rather than face the possibility of being laid off in the future.

Additionally, between November 2007 and November 2008, the unemployment rate increased from 4.7% to 6.9% (Bureau of Labor Statistics, 2010a) and job openings decreased 30% (Bureau of Labor Statistics, 2009). Because of the worsened job prospects, individuals who had intended to change their job or career may be reluctant to leave their current organization and re-enter the job market. Instead, many individuals may feel inclined to remain at an organization past their intended date of separation. Though it is unclear what the long-term effects of the economic downturn on retirement trends will be, preliminary data from a phone survey conducted by the Pew Research Center (2009) showed that many older adults were postponing their retirement. Out of a nationally representative sample of 1,164 individuals aged 16 and older in the U.S., 63%

of individuals between the ages of 50 and 61 reported that they expected to delay their retirement due to the recession, and 38% of individuals over the age of 62 reported that they had already delayed their retirement due to the recession.

To date, there have been no studies that have taken into consideration what coping mechanisms, if any, are employed by individuals who cannot leave their employer when they planned. Past research focused primarily on early retirement rather than late or delayed retirement (e.g., Feldman, 1994; Herz, 1995). The attention given to early retirement may be due to past trends demonstrating the increasing occurrence of early retirement (Toossi, 2006). This study not only investigates how the retirement plans of older individuals who may have been affected by the economic crisis, but also how individuals who must postpone their retirement cope with their altered plan. It is expected that the length of the delay will influence the frequency of the coping behaviors. Individuals who must delay their retirement for a longer period of time are expected to engage in more coping behaviors than individuals who delay their retirement for a shorter period of time.

The remainder of this paper is organized into three sections. In the first section, I will define retirement, the main criterion of interest. I will review the research literature investigating the common determinants of retirement intentions. I will also discuss the role of psychological, health, and economic factors on retirement intentions, in order to provide the foundation for the hypotheses to be investigated in the current study. I will then provide a definition of coping as well as an argument for the relationship between retirement delay and coping behaviors. In the second section, I describe the procedures

and measures used in this study. Finally, in the third section, I discuss research findings and their potential implications for both theory and organizational practices.

Defining the retirement construct

A fundamental problem in the retirement literature pertains to how retirement is defined (Feldman, 1994). This problem is due in part to the changing nature of retirement (Wiatrowski, 2001). Up to the end of the 20th century, retirement was typically associated with both job termination and complete workforce withdrawal (Purcell, 2000). However, the increase in life expectancy (e.g., from 68.2 years in 1950 to 77.8 years in 2005; Center for Disease Control, 2008) means that the number of years individuals living beyond retirement is also increasing, which in turn places a considerable financial strain on the Social Security system and the employer retirement benefits plan (Wiatrowski, 2001). In order to supplement the retirement income provided by the Social Security system and the employer retirement benefits plan, a growing number of individuals has made the decision to retire from their career job and continue to participate in the workforce in a different job (Wiatrowski, 2001). In addition, phased retirement options permit the individual to commit to retirement but remain in the workforce for several years prior to job termination (Feldman, 1994). Many workers are abandoning traditional retirement in favor of phased retirement, in which they shift from year-round, full-time employment to part-year or part-time employment, either in their career occupation or in a different occupation (Purcell, 2000). The options for older workers to withdraw and/or alter their work arrangement within their current job position and their pattern of participation following termination of a job associated with retirement

make it exceedingly difficult to define retirement in a conclusive manner (Feldman, 1994).

To address this issue, Beehr (1986) organized retirement definitions using a three-element taxonomy: 1) voluntary vs. involuntary retirement, 2) partial vs. complete retirement, and 3) early vs. on-time retirement. Whether the retirement is voluntary or involuntary is based on the perception of the retiree concerning the degree to which he/she retired by his/her own accord. Consistent with the traditional notion of retirement, complete retirement involves withdrawing entirely from the workforce. Partial retirement refers to bridge retirement or working after retirement. Early retirement is when the retirement age of the individual is less than a “typical” retirement age as determined by various standards within the profession, organization or country. For example, air traffic controllers are required to retire at age 56 unless they demonstrate outstanding skills and experience (Bureau of Labor Statistics, 2010b). Though Beehr did not explicitly delineate the conditions of on-time retirement, the label suggests that on-time retirement occurs at “typical” retirement age. If this is the case, this classification neglects late retirement that occurs after “typical” retirement age. Overall, according to Beehr (1986), the definition of retirement as work role withdrawal (cf. Adams, et al., 2002), refers to complete retirement, but may be voluntary or involuntary, and early or on-time. As such, the definition of retirees proposed by Adams et al. (2002) excludes all persons who engage in any form of paid work.

Other researchers provided definitions of retirement that allow for the individual to continue working while still being considered a retiree. For example, Feldman (1994)

defined retirement as “the exit from an organizational position or career path of considerable duration, taken by individuals after middle age, and taken with the intention of reduced psychological commitment to work thereafter” (p. 287). This definition permits individuals who participate in partial retirement or other forms of post-retirement work to be classified as retired. In addition, Feldman specified the tenure and the age of the retiree in order to distinguish retirement from turnover.

For the purposes of this study, I define retirement broadly in terms of the conditions, timing, and completeness of work withdrawal, in order to encompass the many available alternatives for retirement. Specifically, I define retirement as the intentional action of an older adult, who is eligible for designated retirement benefits, to voluntarily withdraw from a job, irrespective of the individual’s intention to participate in the workforce thereafter. Consistent with Beehr (1986), this definition conceptualizes retirement as a volitional (i.e., voluntary) action by retirement benefit eligible employees, regardless of the completeness of workforce withdrawal.

Consistent determinants of retirement

Although many potential influences on the retirement decision have been studied, a discussion of all these findings is beyond the scope of this review. Instead, the discussion will focus on only three factors that have been repeatedly shown to predict retirement: age, finances and health.

Age

In general, retirement decisions are job withdrawal decisions made by older workers, and should be distinguished from turnover decisions (e.g., decisions to take

another job) made by younger workers for whom workforce withdrawal is not a salient consideration. This notion is supported by the results from a study conducted by Adams and Beehr (1998). Surveying 375 employees at a university, a manufacturing facility and a computer software development company in the midwestern U.S., they found that age was negatively correlated with turnover intention ($r = -.15$) and positively correlated with retirement intention ($r = .49$).

Another study which demonstrated the relationship between age and retirement was conducted by George, Fillenbaum and Palmore (1984) using data from the Retirement History Study (RHS) with 1,845 participants and data from the Duke Second Longitudinal Study (DSLS) with 235 participants. George et al. found that age was the only consistent predictor of retirement for men and women in both samples (R^2 ranging from 6% to 13%). Adams and Beehr (1998) suggested that the combination of a lack of job opportunities and availability of financial resources makes retirement a more likely option for older workers. Another possible explanation for this finding is that societal norms make retirement acceptable for older adults but not for younger adults (Adams, et al., 2002).

Consistent with the fact that age commonly serves as a criterion for retirement eligibility (George, et al., 1984; Purcell, 2000), many researchers investigating the predictors of retirement have limited their sample to adults who are 45 years old or older (e.g., Adams, 1999; Adams, et al., 2002; Beehr, et al., 2000; Brougham & Walsh, 2005; George, et al., 1984; Jacobson, 1972; McNamara & Williamson, 2004; Mutran, Reitzes, & Fernandez, 1997; Schmitt, Coyle, Rauschenberger, & White, 1979; Schmitt &

McCune, 1981). The variations in the minimum age restriction of these studies may represent the variations in retirement eligibilities among organizations.

Finances

An individual's perception of his/her expected financial condition after retirement has been repeatedly shown to be a predictor of the intention and/or action to retire (Adams, 1999; Beehr, et al., 2000; Schmitt & McCune, 1981). In particular, individuals who are satisfied with their anticipated retirement income are more likely to retire than individuals who are not satisfied with their anticipated retirement income (Adams, 1999; Adams, et al., 2002; Beehr, et al., 2000; Feldman, 1994; Schmitt & McCune, 1981). Adams (1999), for example, surveyed 172 non-faculty employees over the age of 45 from two medium-sized Midwestern universities. He found that satisfaction with expected retirement income was significantly negatively correlated with planned retirement age ($r = -0.19$). Schmitt and McCune (1981) conducted a one-year longitudinal study of 513 civil service employees who were all eligible by state law to retire. In this study, the financial variable consisted of current salary, perceived needed and expected retirement income, importance of adequate retirement income and number of dependents. Schmitt and McCune found that this financial composite significantly predicted retirement ($\eta^2 \approx .28$). Overall, these findings as well as those from other studies (Adams, et al., 2002; Beehr, et al., 2000) provide evidence for the role of finances in the decision to retire.

Health

In the same way that lack of financial resources can limit an individual's ability to retire, poor health can limit an individual's ability to continue working (Shultz, et al.,

1998). Both of these factors reduce the options available to a person in deciding his/her employment future. A significant decline in health might result in the inability of a worker to perform his/her job duties, which may in turn lead to involuntary retirement. It must be noted that the American with Disabilities Act (ADA) protects employees from many negative work-related repercussions as a result of having a disability, including those commonly related to aging (e.g., back pains; Sterns & Miklos, 1995). However, a study by Charles (2004) revealed that even after the passing of the ADA, only 33% of individuals with disabilities were provided with appropriate accommodations by their employers. This may be particularly problematic for older workers given the general trend toward greater physiological problems that accompany normal aging (Hansson, DeKoekkoek, Neece, & Patterson, 1997). In particular, Ilmarinen (2001) reported a linear decline in cardiorespiratory and musculoskeletal capacity with age as evidenced in part by the fact maximal oxygen consumption decreased approximately 25% in men and women after the age of 45 years. Based on this finding, Ilmarinen advised that employers to lower the physical work load of physically demanding jobs 20 to 25 percent for workers who are 45 years or older. An older adult is more likely to experience health problems that may adversely affect his/her ability to maintain his/her performance at a physically demanding job.

Mutran, Reitzes, and Fernandez (1997) examined the predictive validity of the physical condition of the workers on retirement in a two-year longitudinal study on a sample of 758 full-time workers between the ages of 58 and 64, who were randomly selected from a list of registered automobile drivers. Individuals who retired by the end

of the two-year period reported having lower physical abilities ($d \approx .212$). Shultz, Morton, and Weckerle (1998) obtained similar findings from their survey of 992 retirees who held blue-collar and white-collar job positions. They found that individuals who involuntarily retired early reported poor health as the most influential factor in their decisions to retire. A possible explanation for why health is predictor of retirement is poor health may result in a discrepancy between the physical abilities of the worker and his/her physical job demands (i.e., work overload), which in turn lead the individual feeling compelled to leave the workforce.

Consistent with past findings, I expect that age, finance and health will be significantly related to retirement intention, which is operationalized as the expected number of years until retirement. Specifically:

Hypothesis 1 (H_1): Age will be negatively related to the expected number of years until retirement.

Hypothesis 2 (H_2): Satisfaction with expected retirement income will be negatively related to the expected number of years until retirement.

Hypothesis 3 (H_3): Perceived quality of health will be positively related to the expected number of years until retirement.

Psychological Determinants

As previously discussed, age may be a index of not only when it is possible to retire (Gustman & Steinmeier, 1984) but also when it is appropriate to do so (Adams & Beehr, 1998). Furthermore, the findings regarding the role of financial well-being and physical health on retirement decisions suggest that these factors operate broadly as

“push” and “pull” influences on the retirement decision (Shultz, et al., 1998). The “push” of poor physical health and the “pull” of financial well-being toward retirement may operate in such a way that they hamper or even override the influences of other variables on the retirement decision. Though age, health and finance may place limitations on when retirement can take place, other factors may also influence retirement intentions. I propose that the psychological factors related to the individual’s motives, values and perception of person-job fit play a role in the decision to retire. The framework proposed by Kanfer and Ackerman (2004) on work motivation provides the premise for these expectations. In accord with the framework proposed by Kanfer and Ackerman (2004), I posit that workers who report a negative discrepancy between their job demands and their abilities (i.e., job demands exceed abilities or work overload) will have stronger retirement intentions (i.e., plan to retire sooner) than workers who report no discrepancy (i.e., abilities match job demands or work match) or a positive discrepancy (i.e., abilities exceed job demands or work underload). However, I expect that the receipt of valuable work incentives will attenuate the effect of the perceived negative discrepancy on retirement. I hypothesize workers who report a better needs-supplies fit (i.e., supplies meet or exceed needs) will have weaker retirement intentions than workers who report a poor needs-supplies fit (i.e., supplies does not meet needs).

The perceived demands of the job in relation to the abilities of the individuals affect their perception of the association between the effort they exert and the resulting performance, which Kanfer (1987) conceptualized as a effort-performance (E-P) function. Performance may differ in terms of effort-sensitivity, which is determined by

task difficulty or the relative magnitude of ability and task demand. In addition, the E-P function may be non-linear (i.e. differing effort-sensitivity at various levels of performance). For example, marginal increases in effort may have little effect on performance, if a great deal of effort has already been put forth. In addition, Kanfer argued that having an inaccurate self-concept or a misunderstanding of the effect of effort on performance level can result in an inaccurate perceived E-P function. Kanfer and Ackerman (2004) asserted that the perceived E-P function, regardless of its accuracy, affects work motivation through self-efficacy and self-concept. This is particularly true when job demands are believed to exceed abilities (i.e., poor abilities-demands fit), such that an increase effort is not expected to lead to a corresponding increase in performance. Such a condition will likely have a negative effect on self-efficacy, self-concept and consequently work motivation. A reduction in work motivation is expected to result in an increase in the likelihood of job withdrawal (Kanfer & Ackerman, 2004). While withdrawal may be in the form of either turnover or retirement, retirement is the more likely option for older adults, for whom retirement is generally more financially feasible and more socially acceptable, and job search is generally more difficult (Warr, 1994).

Related to the E-P function are the effort-utility (E-U) and performance-utility (P-U) functions (Kanfer, 1987). The E-U and P-U functions represent the individual's perception of the value of putting forth a certain amount of effort and the value of attaining a certain level of performance, respectively. Kanfer and Ackerman (2004) posited that the appraisal of the likely outcome influences the perceived utility of effort and performance. As such, the availability of work incentives is proposed to boost work

motivation thereby offsetting some, if not all, of the negative effects of a perceived discrepancy between abilities and job demands. Kanfer and Ackerman (2004) argued that when the abilities of the worker exceed the demands of the job, it may be necessary to provide incentives in order to keep the worker interested in the job and motivated to maintain his/her effort. When the demands of the job exceed the abilities of the worker, Kanfer and Ackerman (2004) hypothesized it may be necessary to provide incentives in order to motivate the worker to increase his or her effort in attempt to reduce the discrepancy. In consideration of adult development, they proposed that age-related changes in motives and interests may necessitate a difference in the incentives offered to older workers compared to younger workers. I hypothesize needs-supplies fit will influence the retirement decision such that individuals who are receiving work incentives they desire are expected to be less likely to retire. In the next section, I review research on the proposed psychological determinants of retirement, including perceived abilities-demands fit and needs-supplies fit. An important caveat of the research examining the age-related differences in abilities and work values is the almost exclusive use of a cross-sectional design; therefore, the findings may represent either an age difference or a cohort difference. However, regardless of group differences, individual differences make it necessary to evaluate each worker to determine his/her perception of the abilities-demands fit and needs-supplies fit. The inconsistency in the literature regarding the operationalization of older adults also poses a problem for being able to compare the results among studies.

Job characteristics

To date, there have been no studies directly investigating the effect of perceived person-job fit on retirement. However, there have been studies examining the influence of job characteristics on retirement (e.g., Beehr, et al., 2000; Elovainio et al., 2005; Mears, Kendall, Katona, Pashley, & Pajak, 2004; Reitzes, et al., 1998; Schmitt, et al., 1979). In order to test whether job demands-control influenced retirement intention, Elovainio et al. (2005) surveyed 3,072 employees from the health and social services sector in Finland. Participants were asked to complete a job demands measure developed by Harris (1989), and a job control measure and a early retirement thoughts measure both adapted by Elovainio et al. (2005). They found that job demands, job control, and the interaction of job demands and job control were significantly related to early retirement thoughts (odds ratio = 1.41, 0.80, and 0.92, respectively), even after adjusting for age, gender, educational level, and self-rated health. The result especially germane to this study is that individuals who perceived having higher job demands were more likely to consider early retirement. The perceived high job demand may be regarded as an indicator of poor abilities-demands fit. Furthermore, Schmitt et al. (1979) investigated whether job characteristics identified to be intrinsically motivating by Hackman and Oldham (1975) influenced retirement. The sample from this study consisted of 250 individuals who had retired from Michigan Civil Services within two years of the data collection, and 422 individuals who were eligible to retire from but were still working for Michigan Civil Services. Comparing the responses of the retirees and non-retirees to the Job Diagnostic Survey (JDS; Hackman & Oldham, 1975). Schmitt et al. found that retirees reported their work involved significantly less autonomy, less interactions with

others, and less skill variety. The perceived lack of these intrinsically motivating job characteristics may be considered a needs-supplies misfit, which presumably contributed to the retirement decision. Together, these findings provide some evidence that person-job fit influences retirement intention.

Job demands

The findings by Elovainio et al. (2005) lend partial support for the hypothesis that a discrepancy between job demands and abilities leads to stronger retirement intentions. However, a more direct assessment of the effects of this discrepancy is necessary. Three broad types of job demands have been identified: physical, cognitive and social (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004). Job demands are defined as characteristics of the job that require physical, cognitive or emotional effort (Schaufeli & Bakker, 2004). Age-related differences in the abilities pertinent to these demands are of particular importance because increases or decreases in abilities with age may lead to a discrepancy between abilities and job demands. Whether an abilities-job demands discrepancy occurs depends on the change in abilities relative to the level of the job demands. For example, in occupations that require only light physical activity, such as accounting (O*NET, 2009a), the decline in the physical abilities must be substantial before it would likely hinder performance. In contrast, in occupations that require heavy physical activity, such as firefighting (O*NET, 2009b), even a moderate decline in physical abilities would likely hinder performance.

Physical demands

As described above, the physical demands of work are expected to be a problem

for older workers particularly in physically demanding jobs (Ilmarinen, 2001). Joulain, Mullet, Lecomte, and Prevost (2000) found that the physical demands of a job can affect perceived appropriate retirement age. They surveyed 60 young adults (age 20 to 25), 60 middle-aged adults (age 40-45), and 60 older adults (age 60-65) and asked them to provide the minimum and maximum appropriate retirement age for 60 occupations. In addition, participants rated each occupation based on 11 job characteristics: moral reasoning, occupational responsibility, need for constant updating, fulfillment, attention span, promotion opportunities, laboriousness, risk of accidents, work pace, individual vs. collective work, and versatility. The results of an exploratory factor analysis of these job characteristics revealed two factors of work activity, namely: the psychological/cognitive factor and the physical factor. The moral responsibility, occupational responsibility, need for constant updating, and promotion opportunities variables loaded primarily onto the psychological/cognitive factor; while laboriousness, risk of accidents, and work pace loaded primarily onto the physical factor. Joulain et al. (2000) found that the main predictor of appropriate retirement age was the physical factor of the job (*p*-value not reported). In other words, their results suggest that the more physically demanding the job, the lower the perceived appropriate retirement age. This can be seen by comparing the physical demands of occupations that had the lowest average appropriate retirement age of 56 (e.g., firefighter, assembly line worker, and construction laborer) and the occupations that had the highest average appropriate retirement age of 64 (e.g., clergy, politician, and judge) in the data collected by Joulain et al. (2000).

Consistent with these results, Jacobson (1972) found that individuals holding

more physically straining jobs reported earlier preferred retirement ages than individuals holding less physically straining jobs. His sample consisted of 145 male employees at a manufacturing company who were between the ages of 55 and 64. The job of each participant was rated on the Rest Allowance (RA) index, which was developed by the Trade Union Congress in 1969, to determine the level of physical fatigue involved. Based on this rating, each job was then designated as a heavy, moderate or light job. The RA index contains nine criteria including the maximum weight handled in each body posture, the control over work pace, and the number of rest periods in between involuntary breaks of work. A smaller percentage of individuals who held heavy jobs reported having good health than those who held light jobs (17.8% vs. 53.0%). Meanwhile, compared to those who held light jobs, a greater percentage of individuals who held heavy jobs reported wanting to retire before age 65 (47.5% vs. 13.9%) and believing that retirement would have a positive effect on their health (55.5% vs. 28.6%). Taken together, the findings by Joulain et al. (2000) and Jacobson (1972) suggest that workers in physically demanding jobs may be more likely to retire earlier than those in less physically demanding jobs.

As previously noted, it is well established that physiological decline is part of the normal aging process (Ilmarinen, 2001). In motivational terms, Kanfer and Ackerman (2004) argued that the slope of the E-P function for physical tasks is likely to be shallower for older adults as compared to younger adults; in other words, increased physical effort may not necessarily result in increased performance. Therefore, it is expected that with age, workers will be more likely to perceive a discrepancy between the

physical demands of their jobs and their abilities. As mentioned previously, whether or not a discrepancy arises between abilities and job demands depends on the amount of decline in abilities relative to the level of job demand.

Cognitive demands

With regard to cognitive job demands, the literature suggests that older adults will only have difficulty meeting the demands on cognitive abilities that decline with age. Cattell (1943) identified two kinds of intellectual abilities: fluid intelligence (Gf) and crystallized intelligence (Gc). Gf is related to working memory, perceptual speed, abstract reasoning, attention and the processing of new information (Kanfer & Ackerman, 2004). On the other hand, Gc is related to experiential knowledge and vocabulary. Gf has been found to peak in the early twenties, whereas Gc continues to increase well into middle adulthood (Sattler, 1982; Stankov, 1988). These trends of cognitive abilities can be used to predict the job performance of older adults.

Kanfer and Ackerman (2004) further suggested that cognitive job demands differentially influence performance across different age groups. For jobs that make high demands on crystallized intelligence (high-Gc job), performance can be expected to increase well into middle age and remain relatively stable until age 60 or 70 years. This proposition is based on the fact that age is generally related to tenure and expertise. Kanfer and Ackerman (2004) posited that performance in high-Gc jobs are less effort-dependent for experts, whom they operationally define as those having more than 10 years of experience performing a job. In contrast, the performance of a high-Gc job will be sensitive to the amount of effort put forth by individuals with less experience and/or

practice.

For jobs that make high demands on fluid intelligence (high-Gf jobs), Kanfer and Ackerman (2004) proposed that job demands may become increasingly difficult with age. With the age-related decline in fluid intelligence, older adults performing high-Gf jobs likely have to exert more effort in order to maintain performance. However, putting forth the maximum amount of effort by older adults may not necessarily result in the same level of performance as that by younger adults. This suggests that the performance of a high-Gf job may become less sensitive to effort over the life span.

Instead of categorizing jobs as either high-Gc or high-Gf in order to predict job performance, Murphy (1989) suggested that, within one job, there are two stages that are differentially demanding on the cognitive abilities of the worker: the transition stage and the maintenance stage. The transition stage is a period of adjusting to a new job or new job duties, during which the worker must acquire new skills and knowledge. Because of the learning required during this stage, Murphy postulated that performance will be largely dependent on cognitive abilities. The maintenance stage takes place in between transition stages when the major work tasks have been well-learned. Murphy suggested that, during this stage, performance will be independent of cognitive abilities, as it is simply a matter of engaging in routinized activities. Instead, he argued performance during the maintenance stage will be determined by personality and motivational factors.

However, it seems unlikely that performance could ever be entirely independent of cognitive abilities as Murphy (1989) posited. Rather, it is more likely that during the transition stage, performance will be dependent on both fluid and crystallized

intelligence. On the other hand, during the maintenance stage, performance will be more dependent on crystallized intelligence. Based on the Kanfer and Ackerman (2004) model, it is reasonable to expect that older workers will have more difficulty maintaining their performance during the transition stage whereas they will have less difficulty during the maintenance stage. Additionally, Park (1994) argues it is likely all jobs include at least one Gf-task and at least one Gc-task.

Social demands

While most of the retirement research has considered the physical and cognitive demands of work, less attention has been paid to the social demands of work. Social demands of work include engaging with co-workers, supervisors, and potential or current clients, if in the service industry (Diefendorff & Richard, 2003; Zapf, Seifert, Schmutte, Mertini, & Holz, 2001). Along with effectively communicating with others, displaying the appropriate emotion is a critical aspect of social interaction that affects work-related outcomes, such as sales and customer satisfaction (Diefendorff & Richard, 2003). Emotional labor, or the regulation of one's emotion at work (Hochschild, 1983), involves following the emotional display rules stipulated by the organization (Ashforth & Humphrey, 1993). These rules generally stress the importance of expressing positive emotion regardless of the actual emotion felt by the worker (Ashforth & Humphrey, 1993). Kapf, Vogt, Seifert, Mertini and Isic (1999) posited emotional labor involves five dimensions: 1) the display of positive emotions, 2) the display and regulation of negative emotion, 3) the recognition of others' emotions, 4) control over the conditions of the social interaction (e.g., when interaction takes place), and 5) the dissonance between

experienced and expressed emotions. In a study investigating the effects of emotional labor, Kapf et al. (2001) surveyed 1,241 individuals employed at various organizations, including a handicapped children's home, hotel, call center, bank, and kindergarten. One consequence of emotional labor considered was emotional exhaustion, which involved feelings of frustration and perceiving the social interaction as demanding. While Kapf et al. (2001) found that age and emotional exhaustion were not related ($r = -.01$), they also found that age was negatively related to having to display positive emotions ($r = -.19$) and experiencing emotional dissonance ($r = -.27$). These findings suggest that older adults are generally less likely to engage in emotional labor and therefore do not experience the negative repercussions of this job demand. Consequently, it is not possible to make a conclusion concerning age-related differences in the perceived demand of emotional labor based on these data.

Many jobs in the service industry make substantial social demands on the employee that involve face-to-face or voice-to-voice interactions between the employee and the organizational clients (Zapf, et al., 2001). For example, a salesperson often communicates directly with the customers to provide information, to sell products or services, or to complete orders (Avolio, Waldman, & McDaniel, 1990). Avolio, Waldman and McDaniel (1990) examined job performance across the lifespan which took into consideration the occupational type. They grouped 111 non-managerial jobs into five occupational groups including a service group, two clerical groups and two craft groups. The service group consisted of socially demanding jobs (e.g., transportation agent, general salesperson, and waitress). Participants were divided into the following

age groups: under 24, 25-29, 30-39, 40-54, and over 55. Job performance was determined by asking supervisors to rate each participant in terms of the quantity, quality, and accuracy of their work, and their job knowledge, efficiency, and overall performance. For the service group, the correlation between age and job performance ($r = .05$) was not statistically significant. Indeed, a relatively weak correlation was found between age and performance for all occupational groups particularly after controlling for experience. Additional analyses revealed a non-linear relationship between age and performance with performance plateauing for all occupational groups. These findings suggest that in service jobs, older adults are able to perform as well as their younger counterparts. Though more direct and controlled research on the social demands of work is needed, this study provides some evidence that the abilities related to meeting the social demands of work may not necessarily decline with age.

The literature reviewed thus far suggests potential discrepancies may arise between the abilities of the workers and the physical and cognitive demands of their job, depending on the job and the age range under consideration. Meanwhile, there was no evidence found indicating a potential discrepancy between the abilities of the workers and the social demands of their job would develop over the lifespan. It is important to note that though findings concerning age-related trends in the ability to meet these three types of job demands can be used to identify potential objective discrepancies between the abilities of older workers and the job demands, it will still be necessary to evaluate subjective (i.e. perceived) abilities-demands fit. As noted by Kanfer and Ackerman (2004), the E-P functions are based on an individual's perceptions and will likely affect

retirement intentions regardless of the accuracy of the perceptions.

Avolio, Waldman, and McDaniel (1990) argued that a positive discrepancy between abilities and demands (i.e., work underload) may also result in retirement. In other words, they predicted that when the abilities of the older workers exceed the demands of the job, workers will become bored and unmotivated, and will be more likely to consider retirement. Contrary to their argument, I do not expect the belief that one can readily meet the demands of one's job will lead to retirement. Based on a sample of 98 individuals employed at a university, McEnrue (2004) found a negative relationship between age and willingness to engage in training ($r = -.26$). A similar result was found in a meta-analysis conducted by Colquitt, Pine and Noe (2009) using 5 studies that had a total sample size of 2,153. Age and the motivation to learn was found to be negatively related (uncorrected $r = -.18$). These findings imply that older individuals may be satisfied with being able to meet the demands of their job and may not desire the added challenge of further learning and training. Accordingly, I expect that it is only when older workers perceive their abilities falling behind the job demands (i.e. negative discrepancy or work overload) that they will be inclined to retire. A negative discrepancy will likely threaten the self-concept of older workers (Feldman, 1994) and lead them to consider retirement.

Hypothesis 4 (H₄): The perception of job demands as exceeding abilities (i.e. work overload) will be negatively related to the expected number of years until retirement.

Work Incentives

While the perception of a work overload by older workers is expected to increase the likelihood of retirement, the receipt of work incentives by older workers is expected to independently decrease the likelihood of retirement. This hypothesis is based on the argument made by Kanfer and Ackerman (2004) that the positive appraisal of work incentives by the worker may increase work motivation through the E-U and P-U functions and, therefore, may serve to counteract the negative effects of a perceived discrepancy between job demands and abilities. A review of the age-related trends in the value of work incentives reveals potential differences in the motives of older workers as compared to younger workers and consequently identifies incentives that may reduce the desire to retire.

Mor-Barak (1995) identified four classes of work incentives for older individuals: financial, personal, social, and generativity. Financial incentives include compensation and benefits. Personal value pertains to the increased personal satisfaction, sense of accomplishment, and self-esteem associated with working. Social incentives pertain to opportunities to meet and interact with others. Generativity refers to the satisfaction derived from passing on knowledge and skills to the next generation (Mor-Barak, 1995).

Financial incentives

While the most common form of financial incentives is income, other payment options such as stock options and bonuses (Burgess, 2005), and benefits such as the provision of healthcare (Schneider, 1987) are becoming more prevalent. Comparing the importance of different work features among younger and older adults, Kalleberg and Loscocco (1983) found older adults valued monetary incentives less than did younger

adults. The researchers used data from the Quality of Employment Survey (QES) conducted by the Institute for Social Research at the University of Michigan which consisted of 1,102 blue- and white-collar workers. They found that the importance of having good pay was greater for younger adults than older adults ($\beta \approx .330$; $p < .05$). A possible explanation for these findings is provided by Warr (2001), who proposed that younger and midlife adults likely have a greater need for income than older adults because of family and other life demands.

Birdi, Warr and Oswald (1995) also investigated the value of different job characteristics across the lifespan. Using data from the International Social Survey Program, they obtained responses from 4,356 individuals between the ages of 18 and 64 who were working in Austria, Great Britain, Ireland, Norway, the U.S. and West Germany. The participants were asked to rate the importance of various extrinsic rewards (i.e., job security, high income, promotion, leisure time and flexible hours) associated with their jobs and intrinsic rewards (i.e., independent work, helping people, and being useful to society). The researchers found that age was negatively correlated with extrinsic work values ($r = -.06$) and positively correlated with intrinsic work values ($r = .07$). Though both of these correlations were statistically significant, they nonetheless represent exceptionally small effect sizes (Cohen, 1992). In addition, because financial incentive was one of several components included in the extrinsic rewards variable, it is not possible to determine what effect, if any, age may have on the value of financial incentive alone. In summary, the results regarding age-related changes in the importance of financial incentives are inconsistent.

Personal incentives

While financial incentives correspond to extrinsic motives for working, personal incentives correspond to intrinsic motives for working, such as feelings of personal satisfaction and achievement. In a study previously described, Birdi et al. (1995) found that age was positively, though weakly, correlated with intrinsic work values ($r = .07$). This result is challenged by the findings of Mottaz (1987) who found a negative relationship between age and intrinsic work values among adults with lower level jobs. Surveying 1,385 individuals employed in various industries, Mottaz (1987) classified the occupation of each participant as either upper-level (i.e., professional and managerial) or lower-level (i.e., clerical, service, and blue-collar). Participants were asked to rate the importance of three intrinsic rewards (task autonomy, task significance and task involvement) and six extrinsic rewards (supervisory assistance, co-worker assistance, adequate work conditions, pay equity, promotional opportunities and adequate fringe benefits). For those who held upper-level positions, there were no significant age-related differences in work values. However, among those who held lower-level positions, older adults valued intrinsic rewards less and extrinsic rewards more than younger adults ($\beta = -.17$ and $.08$ respectively). Mottaz suggested that the reduced value of intrinsic rewards for older adults in lower-level positions as compared to that for younger adults may represent a lowering of standards. Overall, there is mixed evidence regarding whether the value of personal incentives increases or decreases with age.

Social incentives

While certain aspects of interacting with others such as emotional labor may be

considered a job demand, social interactions at work may also be considered an incentive (Schaufeli & Bakker, 2004). Warr (2001) postulated the social value of work would remain stable with age. Additionally, he distinguished between two types of social incentives: the opportunity to interact with others and the opportunity to gain a respected social status. His review of the literature revealed that there was no evidence that the jobs of older and younger adults differ significantly in terms of how much opportunity they have for interpersonal contact. Based on the theory that people continually seek out jobs more suited for them (Schneider, 1987) and therefore will have jobs that best correspond to their motives by late adulthood, Warr (2001) concluded it is likely that older adults value social interactions as much as younger adults.

Contrary to this conclusion, Wright and Hamilton (2007) found that older adults attached more importance to interpersonal contact at work more than younger adults. Their analysis of data from the Quality of Employment Survey which included 592 male workers revealed older workers were more likely than younger workers to report that the opportunity to interact with others was a desirable job characteristic (50% of those 60 years old or older vs. 33.9% of those 20 to 29 years old). These results are consistent with the notion that older adults place more value in social contact at work than younger workers. Indeed, Carstensen's (1999) socioemotional selectivity theory posited social interaction continues to be valuable to individuals throughout the lifespan, though the motives for seeking social interaction will change. Again, the data regarding whether or not there is a change in the value of social rewards over the lifespan are contradictory.

Generativity incentives

The concept of generativity was first developed by Erikson (1964) as part of his model of psychosocial development. This development is described in terms of eight stages, each featuring a conflict which must be resolved (Manheimer, 2004). Erikson speculated that, at the seventh stage, individuals are faced with stagnation (i.e., concern for self) versus generativity (i.e., concern for others). Generativity was hypothesized to be most naturally expressed toward an individual's own children; however, an individual would find other targets for the expression if he/she were without children. The salience of generativity was expected to increase until middle adulthood and then decrease steadily thereafter (Manheimer, 2004).

The results of a study by McAdams, de St. Aubin and Logan (1993) provided partial support for Erikson's hypothesis that generativity motives peak in middle age. McAdams et al. surveyed 152 individuals randomly selected from a community sample. The sample consisted of approximately equal number of younger (ages 22-27), midlife (ages 37-42) and older adults (ages 67-72). Generativity was measured on several different levels including concern, commitment, and action. Generative commitment was described as the mechanism that turns generative concerns into generative actions. The Loyola Generativity Scale was developed by the researchers to measure generative concerns. Generative commitment was assessed by asking participants to list ten personal goals, which were scored based on the type of generative aims. To assess generative actions, participants were administered a behavior checklist that included generative activities and were asked to report how often they engaged in each behavior during the past two months. An additional measure of generativity required participants

to describe three important life experiences in detail. Two independent coders noted when generativity features (e.g., intergenerational involvement) were included in the autobiographical recollection. The analysis of the composite generativity score revealed that the generativity scores of midlife and older adults were both significantly higher than that of younger adults ($p < .01$), but were not different significantly from each other. McAdams et al. concluded that with an increasing sense of responsibility to society, adults begin to act in generative ways. Their findings imply that generativity increases in middle adulthood as Erikson (1964) hypothesized; however, it appears to remain stable thereafter. This finding suggests that the opportunity to engage in generative behaviors at work, such as mentoring younger workers, may encourage older workers to postpone retirement.

The review of the literature thus far on age-related differences in work values provides some evidence that the value of various work incentives may change with age. The opportunity to receive generative incentives may be more effective for motivating older workers than younger workers. Meanwhile, contradictory findings make it uncertain the relative effectiveness of personal, financial and social incentives for younger adults compared to older adults. As previously mentioned, through the E-U and P-U functions, work incentives are expected to increase work motivation (Kanfer & Ackerman, 2000), and accordingly decrease the desire to retire.

Hypothesis 5 (H_5): The perception of poor needs-supplies fit will be negatively related to the expected number of years until retirement.

Coping

As previously mentioned, the current economic crisis likely makes finances particularly salient to the retirement decision at this time. This recession was primarily caused by one of the largest housing and credit bubbles in history (The Economist, 2008a). A drastic decline in house prices (e.g., almost 20% as of October 2008; The Economist, 2008a), along with credit-related losses have contributed to a variety of negative consequences, including the collapse and buyout of major investment banks, and the near downfall of the U.S. auto industry (The Economist, 2008a). One outcome of the economic downturn that may be particularly salient to workers is the widespread layoffs, which have contributed to an increase in the unemployment rate from 6.8% to 7.2% during 2008 (The Economist, 2009). During the 12 months after December 2007, when the recession officially began, approximately 2.6 million jobs were lost, the largest 12-month drop since World War II (The Economist, 2009). In addition, the assets of U.S. mutual funds declined by \$2.4 trillion while the value of global stockmarkets shrunk by approximately \$30 trillion in 2008 (The Economist, 2008b). In terms of individual losses, any American who invested \$100 per month into a domestic mutual fund for the past 10 years as of December 2008 has less than he/she contributed (The Economist, 2008b). In addition to equities, the assets of risky investments, such as corporate funds, commodities and hedge funds, have declined dramatically (The Economist, 2008b). Overall, a wide range of financial investments that may have been intended to yield the funds needed for retirement have depreciated significantly during the current recession. Faced with job loss and/or a diminished expected retirement income, a person may not have any choice but to delay retirement.

Indeed, the negative effects of the recession on retirement funds and employment opportunities presumably make retirement unfeasible and turnover unwise for many older workers. Accordingly, the focus of this study was expanded beyond retirement intention to also consider the coping behaviors of individuals who have been forced to modify the timing of their retirement. Although coping has long been researched in terms how individuals respond to various types of work-related stressors such as lack of job security, there have not been any studies to date that consider the coping behaviors of individuals who must delay their retirement. Stress is expected to arise when preferred outcomes are not attained, thereby creating a discrepancy between perceptions and desires (Edwards, 1998). The larger the discrepancy between perceptions and desires (Edwards, 1988) and the more valuable the outcome (Edwards, 1998), the greater the stress caused by the failure to arrive at the desired outcome. Past findings suggest that chronic and acute stress may lead to a wide range of adverse consequences, including impaired cognitive functioning (e.g., Lupien et al., 2005; Wolkowitz, Reus, Weingartner, & Thompson, 1990), mood disorders (Young, 2004), an impaired immune system (Lundberg, 2002) and poor blood circulation (Jones & Bright, 2001). Coping refers to the attempt to inhibit or mitigate the negative influence of stress on physiological and psychological well-being (Edwards, 1998).

Latack and Havlovic (1992) proposed a framework for integrating past theories of coping. They posited that coping consists of two different dimensions: focus and method. The focus refers to the target of the coping whereas method refers to the approach used in coping. Lazarus and Folkman (1984) differentiated emotion-focused

coping from problem-focused coping. Emotion-focused coping involves protecting or promoting one's well-being through activities which address the symptoms rather than the cause of the stress. Some examples of emotion-focused coping behaviors are the minimization or avoidance of the difficulty in order to reduce emotional distress.

Cognitive reappraisal is another type of emotion-focused coping that involves adjusting one's desires to match one's perception of reality, or diminishing the importance placed on the discrepancy between one's perception and desires. In contrast, problem-focused coping aims to rectify the source of the stress rather than alleviate the symptoms of the stress through the management of the self or situation. An individual using problem-focused coping may attempt to outline the problem, brainstorm potential solutions, determine the advantages and disadvantages of each alternative, and finally execute a chosen action. Lazarus and Folkman (1984) posited that individuals engage in problem-focused coping when they believe their situation to be modifiable, and in emotion-focused coping when they believe their situation to be unmodifiable.

Beyond the focus of coping, various methods of coping may be utilized. The most basic distinction made regarding the method of coping is whether it is cognitive or behavioral. Latack and Havlovic (1992) suggested that cognitive coping consists of mental operations, such as planning one's strategy, and behavioral coping consists of taking action, such as carrying out one's plan. Additionally, coping may be classified as either active or avoidant, which are conceptually similar to Cannon's (1929) fight or flight response (Latack, 1986). Active coping encompasses behaviors that proactive in nature, while avoidant coping encompasses behaviors that are escapist in nature (Latack,

1986). Communicating one's perspective of a problem to someone who may be of assistance would be considered active coping whereas evading the person regarded as the source of the problem would be considered avoidant coping. Coping may also be done solitarily or socially (Latack & Havlovic, 1992). In fact, social support may be seen as a coping resource as other individuals may aid in developing solutions or providing an outlet for emotional release.

While some coping behaviors may be effective in lessening the stress, others may be unsuccessful or even harmful. Cognitive reappraisal that results in a vastly inaccurate perception of reality and alcohol abuse are two examples of unhealthy coping behaviors. However, numerous researchers (e.g., Latack & Havlovic, 1992; Lazarus & Folkman, 1984) also noted the importance of distinguishing between coping and its outcomes in order to avoid confounding these two variables. In fact, Latack and Havlovic (1992) identified several coping measures with items that mention the effectiveness of the coping (e.g., "I am able to put the job out of my mind when I go home"; Osipow & Spokane, 1984).

The relationship between the stress and coping was demonstrated in a study by Shimazu and Kosugi (2003). They surveyed 4,487 men employed at a research institute in the automobile industry in Japan. The job stressors of interest in their study included high cognitive demand, overload, role ambiguity, and insufficient authority. As argued by Edwards (1988), each of these stressors can be viewed as a discrepancy between the desires and perceptions of the individual. For example, insufficient authority occurs when the amount of power one wishes to have exceeds the amount of power one

perceives to have. Shimazu and Kosugi (2003) assessed the frequency of engaging in four types of coping behaviors: active coping (i.e., problem-focused coping), distancing, seeking social support, resignation (i.e., acceptance) and restraint (i.e., control over emotional expression). High cognitive demand and work overload were positively correlated with active problem-focused coping ($r = .22$ and $r = .20$). Role ambiguity and insufficient authority were negatively correlated with active problem-focused coping ($r = .24$ and $r = -.36$), but positively correlated with distancing oneself from the problem ($r = .21$ and $r = .23$) and acceptance ($r = .32$ and $r = .33$). These data imply that individuals respond to higher levels of stressing by engaging in higher frequencies of coping behaviors.

As applied to the present study, the inability of an older worker to retire at the time he/she intended is expected to serve as a stressor. Based on the proposition made by Edwards (1988) that larger discrepancies between perceptions and desires lead to more stress, I hypothesize that the duration of the retirement delay will influence coping intensity. Individuals who must defer their retirement for a longer period of time are expected to experience more stress and therefore engage in more coping behaviors than individuals who must defer their retirement for a relatively shorter period of time. As previously noted, no studies have been conducted that considered the coping behaviors of workers forced to delay their retirement. Due to the exploratory nature of this investigation, a hypothesis regarding the type of coping is not put forth; however, the following hypothesis regarding coping intensity is proposed.

Hypothesis 6 (H_6): The time delay of retirement will be positively related to the

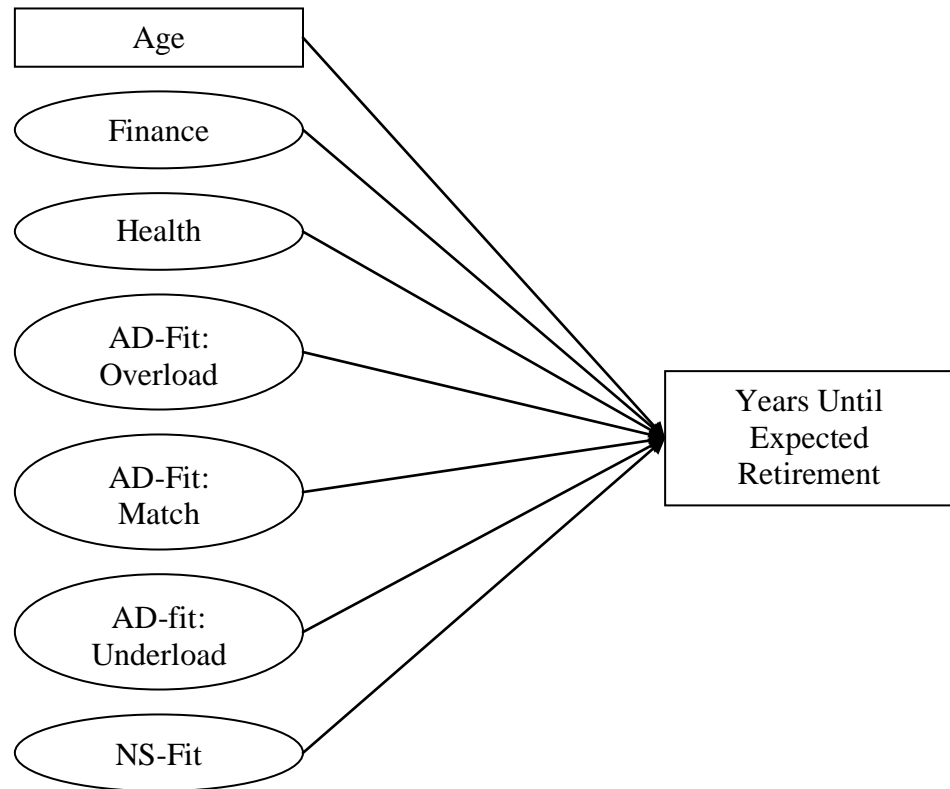
frequency of coping activity.

CHAPTER 2

AN OVERVIEW OF THE PROPOSED RESEARCH

The review of the literature provided evidence that age, health and finances are important factors to the retirement decision. Individuals who are older, in poorer health, or are more satisfied with their retirement are expected to retire sooner. Based on the framework of work motivation provided by Kanfer and Ackerman (2004), I propose that abilities-demands fit and needs-supplies fit will also influence the retirement decision. Individuals who perceive their job demands as exceeding their abilities or their needs as exceeding the supplies offered by their job are expected to retire earlier than those who do not perceive such discrepancies. Figure 1 summarizes the expected relationship between the proposed predictors and retirement intention.

Figure 1. Hypothesized model of retirement intention predictors.



Considering the potential of the current recession to force many individuals to postpone their retirement, the focus of the study was broadened to include the coping behaviors in response to retirement delay. I predict that the length of the retirement delay will influence the frequency at which an individual engages in coping behaviors.

Method

Procedure

Participants were recruited via e-mail in cooperation with the alumni association of Georgia Institute of Technology as part of a larger study investigating retirement planning and turnover intentions. Participants were sent an introduction e-mail providing a description of the study, an assurance of confidentiality, researchers' contact

information, and the website address for the on-line survey. The survey was estimated to take approximately 15 minutes to complete. Upon accessing the survey website, participants were asked to read the consent form and indicate their agreement to participate before proceeding. The next page of the survey provided brief instructions that included the request for the participants to complete the survey in one sitting. At the end of the survey, participants were thanked for their time and asked to specify if they wished to receive a summary of the findings. To encourage participation, individuals who completed the survey within two weeks of receiving the introduction email were automatically entered into a drawing for a chance to be one of ten winners of \$100. Reminder e-mails to complete the survey were sent to participants three days before the two-week deadline.

Participants

Participants were recruited from among 5,325 alumni who had obtained a bachelor's, master's, or doctoral degree in any engineering field from the Georgia Institute of Technology between 1965 and 1990. Of these alumni, only 5,265 were contacted due to one e-mail address being invalid and 59 individuals having previously opted out of the on-line mail server used to contact these individuals. A total of 1,031 individuals (19.9%) completed the survey, with 822 of these respondents (79.7%) being employed. Consistent with the methodology used in past studies on retirement (Adams, 1999; Adams, et al., 2002; 2000; Brougham & Walsh, 2005; George, et al., 1984; Jacobson, 1972; Mutran, et al., 1997; Schmitt, et al., 1979; Schmitt & McCune, 1981), only participants 45 years of age or older were included in the study. Since the proposed

predictors of retirement include factors related to the current work conditions (i.e., abilities-demands fit and needs-supplies fit), the sample was further limited to individuals who planned to retire from their current organization, rather than quit their current organization and subsequently work at and retire from another organization. In other words, person-job fit at one's current organization is not expected to affect one's retirement from a future organization. The final sample size was 525 participants.

The final sample ranged in age from 45 to 66 ($M = 53.8$, $SD = 5.3$), with 90.5% ($N = 475$) male. The highest education level attained by this group was 46.3% with a bachelor's degree, 45.1% with a master's degree, and 8.6% with a doctoral or other professional degree. The marital status of this sample was 88.0% married or living with a partner, 6.3% divorced, 0.8% widowed, and 5.0% never married. Participants reported a wide variety of occupational job titles, including teacher, pilot, engineer, and chief executive officer. Organizational tenure ranged from 0.1 to 41.8 years ($M = 17.7$, $SD = 10.5$).

Measures

Participants completed a battery of background, demographic, attitude and goal measures. Aside from the measures of background and retirement intentions, all items within each measure were presented in random order. Each measure used is described below. To obtain more stable estimates of internal consistency reliability for these measures, the composite scores and internal consistency reliability coefficients were computed based on the entire sample of employed participants ($N = 822$). The constructs

assessed by these measures are expected to have the same meaning regardless of whether individuals plan to retire from their current organization or from another organization.

Finances

To evaluate satisfaction with expected retirement income, a shortened version of the five-item measure developed by Adams (1999) was used. Two questions were used to assess satisfaction with expected retirement income; namely, “I worry about whether my family income will be adequate when I retire,” and “I am satisfied with what my standard of living will be when I retire.” The response scale contained six alternatives (from “strongly disagree” to “strongly agree”). The correlation between these two items was .39.

Health

The health measure was based on the four-item measure developed by Adams (1999). Consistent with past studies (e.g., Beehr, et al., 2000; Schmitt & McCune, 1981), a two-item measure of health was used, which consisted of “Generally speaking, my health is very good,” and “Overall, I am very satisfied with my health.” Participants were asked to report the extent to which they agreed with each item by using a six-point scale, ranging from “strongly disagree” (1) to “strongly agree” (6). The correlation between the two health items was .76.

Abilities-demands fit

A 12-item measure was used to assess the degree to which the individual perceived a fit between the demands of his/her job and his/her own competencies. Four items were from the Perceived Ability-Job Fit measure developed by Abdel-Halim

(1981). A sample item from this measure is “My job gives me a chance to do the things I think I do well.” The remaining 8 items were locally-developed to assess perceived fit between abilities and job demands in specific work dimensions. Four items were written to evaluate perceived abilities-demand fit with respect to workload, with two items written to assess a positive discrepancy between perceived abilities and job demands (i.e., work underload; e.g., “I can easily handle all the demands of my job”) and two items written to evaluate a negative discrepancy (i.e., work overload; e.g., “My job is demanding and can be fatiguing at times”). In addition, two items were developed to assess perceived fit with respect to flexibility and change (e.g., “I have little problem adapting to changes in my job”), and two items were written to measure perceived fit with respect to work pace (e.g., “I can keep up with the pace demanded by my job”). The two flexibility/change items were designed to evaluate the individual's perception of his/her ability to adapt to work modifications. The two work pace items sought to assess the extent to which the individual believes he/she is able to work as quickly as his/her job requires. Participants were asked to report the extent to which they agreed with each item by choosing from six alternatives ranging from “strongly disagree” to “strongly agree”.

Along with visual inspection of the polychoric intercorrelations among the 12 items, structural equation modeling was used to assess the underlying structure of the abilities-demands measure. A single-factor model was first fitted to the data in attempt to obtain the most parsimonious solution. The fit index showed poor fit to the model (CFI = .68; RMSEA = .18). Next, a two-factor model was fitted to the data with the second factor being comprised of items that had low loadings (i.e., less than .4) on the first

factor. The two-factor model showed improved fit over the single-factor model, but was still relatively poor (CFI = .73; RMSEA = .16). Finally, a three-factor model was developed after taking into consideration the polychoric intercorrelations of the items, which indicated there were three clusters of items. Additionally, one item (“Switching to a new technology at work is challenging for me”) was excluded from subsequent analyses due to the majority of its polychoric correlations with the other items being small (i.e., less than .20; Cohen, 1992). The fit indices indicated that the three-factor model fitted the data adequately (CFI = .90; RMSEA = .11). The results of the LM test led to the inclusion of two additional parameters. The final model obtained reasonably good fit (CFI = .97; RMSEA = .06) based on recommended cutoff values of 0.95 for CFI and 0.06 for RMSEA by Hu and Bentler (1999).

Although items were originally written to assess fit with specific types of work demands in mind, the dimensions that emerged from the analysis suggested items clustered in terms of the perceived work load rather than work demand type (see Table 1): work overload (3 items; $\alpha = .66$), work underload (4 items; $\alpha = .67$) and work match (5 items; $\alpha = .85$). Items in the work overload dimension pertained to a negative discrepancy between abilities and demands (i.e. abilities exceed demands). Work underload items assessed a positive discrepancy between abilities and demands; meanwhile, work match items referred to the correspondence between abilities and demands.

Table 1. Standardized factor loadings for abilities-demands fit measure.

Item	Factor		
	1	2	3
Match			
1. I feel that my job uses my full abilities.	.79		
2. I consider my job to be rather dull. (R)	.73		
3. My job is routine and not very challenging to me. (R)	.68		
4. I think that I am well-matched for my job.	.72		
5. My job gives me a chance to do the things I think I do well.	.77		
Underload			
6. I can easily handle all the demands of my job.		.71	
7. I can keep up with the pace demanded by my job.		.82	
8. I have little problem adapting to changes in my job.		.63	
9. I have few problems learning new skills required for my job.		.35	
Overload			
10. My job is demanding and can be fatiguing at times.			.74
11. My job requires that I work quickly and efficiently.			.58
12. In recent years, my job has become more demanding.			.69

Needs-supplies fit

To assess needs-supplies fit, participants completed a modified version of the 16-item Meaning of Work Scale (MWS) developed by Mor-Barak (1995). According to Mor-Barak (1995), these items combined to yield a score for each of four different types of work incentives: social contact, personal, financial, and generativity. Due to practical time constraints, a shortened version of the MWS was created by selecting only the two highest loading items from each subscale as reported by Mor-Barack (1995). The 8 items chosen were subsequently modified to permit assessment of whether the individual perceived that his/her current job offered as much of a benefit as desired. Participants indicated their agreement to each statement using a six-point Likert-type scale ranging from “strongly disagree” (1) to “strongly agree” (6). Sample items for each scale are “My job gives me as much respect and esteem from other people as I would like” (social contact), “My job helps me to feel as worthwhile as I would like to feel” (personal), “My job pays me as much as I would like” (financial), and “My job gives me as many opportunities to share my skills with younger people as I would like” (generativity).

In contrast to the four-factor structure found by Mor-Barak, the results of the polychoric correlational analysis and the structural equation modeling of the 8-item needs-supplies fit measure suggested it was unidimensional ($\alpha = .87$). The polychoric intercorrelations ranged from medium to large in size (greater than .30; Cohen, 1992). Additionally, the fit indices showed a single-factor model fitted the data adequately (CFI = .93; RMSEA = .18). Following the results of the LM test, three additional parameters were added to the model to further improve the fit (CFI = .99; RMSEA = .04). This

finding suggested that the 8-item scale captures a single dimension related to the discrepancy between the desires of the worker and the incentives of the work (see Table 2).

Table 2. Standardized factor loadings for needs-supplies fit measure.

Item	Loading
1. gives me all the benefits (for example, health care) I would want.	0.75
2. fulfills my need to feel worthwhile.	0.79
3. gives me as many opportunities to pass my knowledge to the next generation as I would like.	0.69
4. gives me as many opportunities to share my skills with younger people as I would like.	0.67
5. gives me personal satisfaction.	0.75
6. gives me as much respect and esteem from other people as I would like.	0.87
7. pays me as much as I would like.	0.82
8. gives me as many chances to interact with other people as I would like.	0.76

Retirement intention and retirement delay

Retirement intentions and retirement delay were calculated using the responses to two questions. First, participants were asked to report their expected retirement age prior to December 2007 (i.e., “Before December 2007 (when the economic downturn began), at what age did you expect to retire?”) Second, participants were asked to report their current expected retirement age (i.e., “All things considered, at what age do you expect to retire?”) Retirement intention was operationalized as the difference of the participant’s

the current expected retirement age and reported age. Retirement delay was calculated by taking the difference of the reported prior expected retirement age and the current expected retirement age.

Coping with retirement delay

Only participants who indicated that they had changed the timing of their retirement during the past year were directed to the coping section of the on-line survey. To determine the frequency of engagement in coping behaviors, participants were asked to complete a 14-item measure comprised of the Brief COPE (Carver, 1997) and the Coping with Stress at Work Measure (CSWM; Dewe & Guest, 1990). The Brief COPE was selected based on the fact that it measures coping in response to a prolonged stressor rather than a one-time stressor. The original scale includes 14 subscales: active coping, planning, positive reframing, acceptance, humor, religion, use of emotional support, use of instrumental support, self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. Each of these subscales included two items. Due to the sensitive nature of religion and substance use, the subscales pertaining to these topics were not used in this study. Additionally, self-blame and behavioral disengagement do not fit with the standard definition of coping, which is the attempt to alleviate or inhibit the negative effects of stress. Indeed, self-blame, which involves condemning oneself, would likely aggravate the symptoms of stress and the behavioral disengagement is the termination of coping efforts. Therefore, the self-blame and behavioral disengagement subscales from were not used in this study. The CSWM is an empirically-derived scale developed to measure coping in response to work stressors. This measure consists of six

subscales: rational task oriented behaviors, emotional release, use of home resources, recovery and preparation, postpone action, and passive attempts to tolerate the effect of the stress. Items from the CSWM that pertained to coping with a one-time stressor were not utilized.

The items included in the final combined coping measure employed in this study were selected and modified according to the guidelines set by Latack and Havlovic (1992). They asserted that in order for a coping measure to be comprehensive, it should include items from each of the four quadrants in the 2x2 matrix of focus (emotion-focused vs. problem-focused) by method (cognitive vs. behavioral). Latack and Havlovic (1992) also advised that items representing the active/avoidant and solitary/social subdimensions of method be included. This method of selection yielded two cognitive problem-focused items (e.g., “tried to come up with a strategy about what to do about the change”), four behavioral problem-focused coping items (e.g., “took action to try to make my situation better”), four cognitive emotion-focused coping items (e.g., “tried to look for something good in the change to my retirement timing”), and four behavioral emotion-focused coping items (e.g., “tried to get comfort and understanding from someone”). Additionally, consistent with the recommendations by Latack and Havlovic (1992), items were revised to assessed coping rather than coping effectiveness (e.g., “I’ve been getting help and advice from other people” changed to “I’ve been trying to get help and advice from other people”). Participants were instructed to respond by choosing from six alternatives ranging from “never” to “very often.”

Again, structural equation modeling was used to evaluate the underlying structure of the coping measure. A single-factor model was first tested; however the fit indices showed exceptionally poor fit of the model to the data (CFI = .68; RMSEA = .18). Subsequently, a two-factor model was constructed by creating a second factor composed of items that did not have high loadings in the single-factor model (i.e., loading less than .4). The two-factor model showed improved fit over the single-factor model; however, the fit was still relatively poor (CFI = .83; RMSEA = .13). One item (“learned to live with it”) was subsequently removed from the model due to its low correlation with the other items and with the latent factors. The elimination of this item along with the addition of two parameters identified by the LM test led to a final model with relatively good fit to the data (CFI = .94; RMSEA = .09). Two common coping dimensions were found (see Table 3): active coping (10 items; $\alpha = .86$) and avoidant coping (3 items; $\alpha = .47$). As previously discussed, active coping includes attempts to address the cause of the stress while avoidant coping includes attempts to divert one’s attention away from the source of the stress.

Table 3. Standardized factor loadings for coping measure.

Item	Factor 1
Active coping	
1. tried to come up with a strategy about what to do.	0.79
2. thought hard about what steps to take.	0.75
3. concentrated my efforts on doing something about the situation I'm in.	0.63
4. taken action to try to make my situation better.	0.64
5. tried to get advice or help from other people about what to do.	0.56
6. tried to get guidance from other people.	0.57
7. tried to look for something good in the change.	0.58
8. tried to get comfort and understanding from someone.	0.51
9. expressed my negative feelings to others.	0.43
10. tried to reassure myself that everything was going to work out alright.	0.39

Table 3 (continued).

	Factor
Item	2
Avoidant coping	
1. ignored my situation until I felt ready to address it	0.69
2. refused to believe that I must change my retirement timing.	0.63
3. turned to work or other activities to try to take my mind off of my situation.	0.49

Results

Table 4 presents the descriptive statistics, including the means, standard deviations, and internal consistency reliabilities for each variable. For measures comprised of two items, the correlation between the two items was reported rather than the coefficient alpha. The internal consistency coefficients and inter-item correlations approached or exceeded .70 for all but two measures, the finances and avoidant coping measures. The low internal consistency reliability obtained for these measures may be due to the length of these scales, with the finances and avoidant coping measures consisting of 2 and 3 items respectively.

Table 4. Means, standard deviations, and reliabilities for study variables

Variable	N	Mean	SD	# of items	Possible range	α
Age	525	53.75	5.32			
Expected years until retirement	525	9.86	5.80			
Years of retirement delay	216	3.34	1.90			
Current expected retirement age	525	63.61	5.04			
Previous expected retirement age	525	62.23	5.27			
Finances	507	7.75	2.13	2	2 - 12	0.39
Health	497	9.92	1.91	2	2 - 12	0.76
Abilities-demands fit – Overload	519	13.79	2.69	3	3 - 18	0.66
Abilities-demands fit – Match	519	23.98	4.80	5	5 - 30	0.87
Abilities-demands fit – Underload	519	14.21	2.55	4	4 - 24	0.67
Needs-supplies fit	516	36.29	7.13	8	8 - 48	0.87
Active coping	169	30.40	8.54	10	10 - 60	0.86
Avoidant coping	168	6.40	2.84	3	3 - 18	0.52

The correlations among all the variables are presented in Table 5.

Table 5. Correlations among study variables

Variables	1	2	3	4	5	6	7
Criterion variables							
(1) Expected years until retirement	—						
(2) Years of retirement delay	.12**	—					
(3) Current expected retirement age	.53**	.10*	—				
(4) Previous expected retirement age	.46**	-.31**	.91**	—			
Predictor variables							
(5) Age	-.59**	-.03	.37**	.37**	—		
(6) Finance	-.15**	-.17**	-.19**	-.11*	-.02	—	
(7) Health	-.12**	-.11*	-.03	.02	.11*	.23**	—
(8) Abilities-demands fit-Overload	.02	.05	-.00	-.02	-.03	.09	-.07
(9) Abilities-demands fit-Match	.07	.01	.10*	.09*	.02	.17**	.21**
(10) Abilities-demands fit-Underload	.08	-.05	.12**	.14**	.03	.17**	.15**
(11) Needs-supplies fit	-.01	-.08	-.02	.02	-.01	.12**	.28**
(12) Active coping	-.01	.07	.07	.04	.06	-.06	-.03
(13) Avoidant coping	.16*	.14	.11	.06	-.06	-.18*	-.22**

Note. * $p \leq .05$, ** $p \leq .01$.

Table 5 (continued).

Variables	8	9	10	11	12	13
Criterion variables						
(5) Expected years until retirement						
(6) Years of retirement delay						
(7) Current expected retirement age						
(8) Previous expected retirement age						
Predictor variables						
(5) Age						
(6) Finance						
(7) Health						
(11) Abilities-demands fit- Overload	—					
(12) Abilities-demands fit- Match	.38**	—				
(13) Abilities-demands fit- Underload	-.03	.25**	—			
(11) Needs-supplies fit	.18**	.65**	.19**	—		
(12) Active coping	.17*	.08	.01	.03	—	
(13) Avoidant coping	.10	-.06	-.14	-.12	.20**	—

Note. * $p \leq .05$, ** $p \leq .01$.

A hierarchical regression analysis was performed to test the multiple hypothesized predictors of retirement (see Table 6). The independent variables were entered in the following order: a) age, health and finances (Hypotheses 1, 2, and 3), and b) abilities-demands fit and needs-supplies fit (Hypotheses 4 and 5). Age was expected to be negatively related to years until expected retirement (Hypothesis 1). This hypothesis was

supported by the results ($\beta = -.61, p < .01$). Consistent with past findings, Hypothesis 2 posited that satisfaction with one's expected retirement income would be negatively related to years until expected retirement. This hypothesis was also supported ($\beta = -.29, p < .01$). Hypothesis 3 pertained to the positive relationship anticipated between health and years until expected retirement. However, the results obtained from the hierarchical regression analysis ($\beta = -.06, p > .05$) failed to provide support for Hypothesis 3.

Hypothesis 4 stated that work overload would be negatively related to years until expected retirement. The regression analysis did not yield support for this hypothesis. The results suggested that two facets of abilities-demands fit, work match and work underload, accounted for a significant proportion of variance in retirement intention beyond age, health and finances. Work underload ($\beta = .11, p < .01$) and work match ($\beta = .18, p < .05$) were associated with later expected retirement. Hypothesis 5 proposed needs-supplies fit would be positively related to years until expected retirement. The results were contrary to expectation. Needs-supplies fit was not did not account for a significant portion of variance in years until expected retirement ($\beta = -.09, p > .05$). Therefore, support hypothesis 5 was also not found.

Table 6. Regression of retirement intention on predictor variables

Predictor	Years until Expected		Current Expected	
	Retirement		Retirement Age	
	Step 1	Step 2	Step 1	Step 2
	β	β	β	β
Step 1: Common predictors				
Age	-.60**	-.61**	.36**	.36**
Finances	-.14**	-.17**	-.16**	-.20**
Health	-.03	-.06	-.04	-.07
Step 2: Proposed predictors				
Abilities-demands fit – Overload		-.05		-.06
Abilities-demands fit – Match		.18**		.21**
Abilities-demands fit - Underload		.11**		.13**
Needs-supplies fit		-.09		-.10
R^2	.39**	.42**	.16**	.20**
ΔR^2		.03**		.04**

Note. N = 480. * $p < .05$, ** $p < .01$.

Hypothesis 6 posited that retirement delay would be positively related to the frequency of engaging in coping behaviors. Since only one predictor was hypothesized for coping, Hypothesis 6 was tested using correlational analysis. However, retirement delay was not significantly related to either active coping ($r = .07, p > .05$) or avoidant coping ($r = .14, p > .05$). Thus, there was no support for Hypothesis 6.

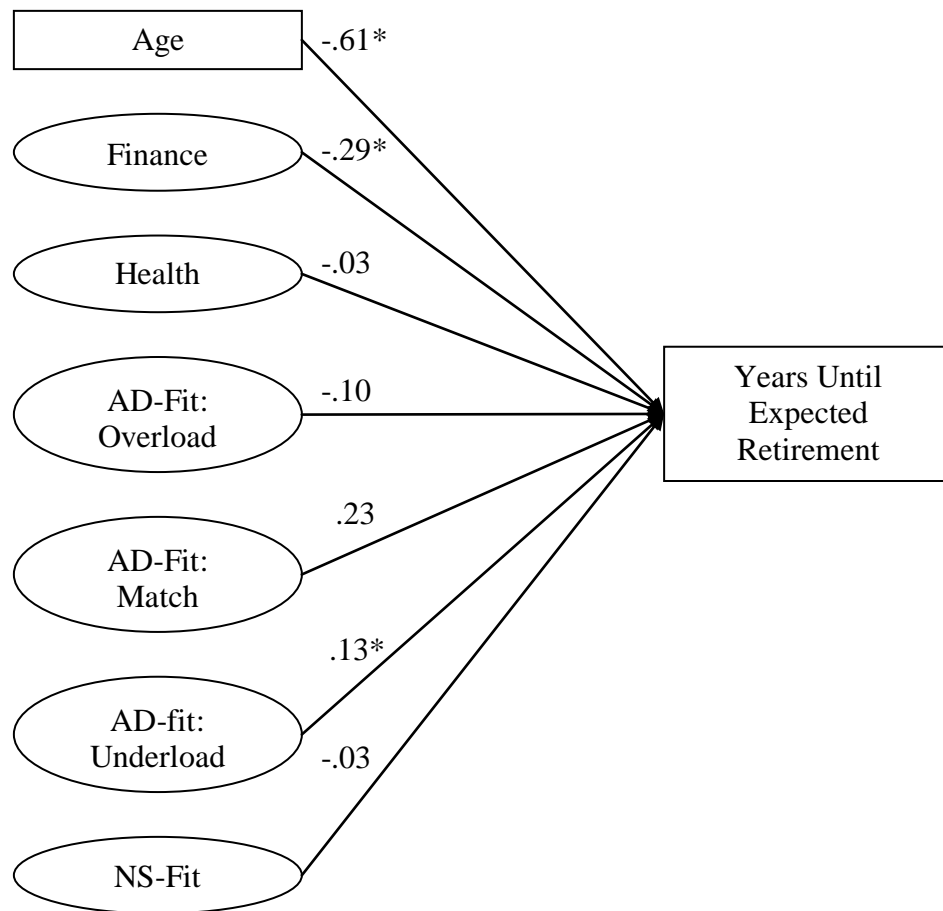
Post hoc analyses

A post hoc power analysis was performed for each statistical test to determine the conditional probability of rejecting the null hypothesis when the alternative hypothesis is true. Given that the observed alpha is .01 and the observed R^2 is .42, the statistical power ($1 - \beta$) of the regression analysis used to test Hypotheses 1 through 5 is greater than .99. The statistical power of the correlational analyses used to test Hypothesis 6 are .77 for active coping and .92 for avoidant coping.

The hierarchical regression analysis also allows for the determination of the incremental predictive validity of the proposed predictors of retirement (i.e., abilities-demands fit and needs-supplies fit) beyond the common predictors of retirement (i.e., age, finances, and health). The results of the hierarchical regression analysis indicates that age, finances and health accounted for a total of 39% of the variance in retirement intention ($p < .01$), and abilities-demands fit and needs-supplies fit accounted for an additional 3% of the variance ($p < .01$).

A post hoc structural equation modeling was also performed to assess the model of the proposed relationships among age, health, finances, abilities-demands fit, needs-supplies fit, and retirement intention after correcting for measurement error. However, the model showed rather poor fit to the data ($CFI = .80$; $RMSEA = .09$), as seen in Figure 2.

Figure 2. Test of hypothesized model of retirement intention predictors.



Note. N = 472. CFI = .80, RMSEA = .09.

CHAPTER 3

DISCUSSION

There were two aims of this study: to evaluate the ability of perceived person-environment (P-E) fit to predict retirement intention and to investigate the coping activity of individuals who report an expected delay in retirement. Given the predictions of a looming workforce shortage, it is important to gain a better understanding of the factors that contribute to the retirement decision in hopes of finding an effective means of persuading older individuals to remain in the workforce. A review of the literature suggested that beyond the previously established predictors of retirement (i.e., age, health and finances), person-job fit would influence retirement intention via its effect on work motivation (Feldman, 1994; Kanfer & Ackerman, 2004). Furthermore, the upheaval of the economy likely brought job loss and the depletion of the retirement savings for many individuals (Urban Institute, 2009); therefore, it is crucial to also consider the effect of postponing one's retirement. In particular, retirement delay was expected to be a stressor that would lead individuals to engage in coping behaviors.

Consistent with past findings(Adams, 1999; Adams & Beehr, 1998; Adams, et al., 2002; Beehr, et al., 2000; George, et al., 1984; Joulain, et al., 2000; Reitzes, et al., 1998; Schmitt & McCune, 1981), finances were negatively related to years until expected retirement. Individuals who were more satisfied with their expected retirement income planned to retire sooner. This finding is not surprising as one criterion of retirement is having the financial resources to do so (Wiatrowski, 2001). While organizations should not withhold retirement benefits in order to retain older workers, they can promote later

retirement by implementing a retirement benefit provision that rewards rather than penalizes older individuals for working longer. For example, Stock and Wise (2009) provided evidence to suggest that traditional defined benefits plans discourage individuals from working longer by not allowing them to collect retirement benefits while working past normal retirement age. Therefore, offering bridge employment that permits the receipt of retirement income in conjunction with the benefits earned from working, including salary and health insurance, would likely encourage late retirement.

Additionally, relative to health, finances and person-job fit, age accounted for the largest portion of variance in years until retirement. The finding that chronological age predicts retirement may reflect the influence of social norms on the retirement decision. This is supported by the findings of Joulain et al. (2000). Similar to Avoglio, Panek, and Harcar (2010), Joulain et al. (2000) found an association between mean appropriate retirement age and occupation. For instance, the lowest mean appropriate retirement age was for firefighters and the highest mean appropriate retirement age was for clergymen in both studies. It is plausible that individuals experience pressure to exit the workforce at the age generally viewed as appropriate.

Furthermore, Joulain et al. (2000) found the beliefs about the appropriate retirement age were driven in part by the perceived physical demands of the job. The more physically demanding the job was perceived to be, the lower the appropriate retirement age reported. In fact, there is evidence that individuals in more physically demanding occupations have poorer health and retire at an earlier age compared to individuals in less physically demanding occupations (Jacobson, 1972). It is reasonable

that a cyclical process involving health and work overload results in an increased likelihood of retirement from physically demanding jobs. In particular, in occupations that require heavy physical activity, the normal decline of health that coincides with age likely results in work overload, and in turn, work overload likely further impairs health. Contrary to past findings, I failed to find a significant relationship between health and retirement intention. The lack of support for this hypothesized relationship between health and retirement in my study may be due to the fact that the sample was comprised largely of white-collar workers whose jobs are unlikely to be highly physically demanding. As a result, their performance and accordingly their retirement decisions are not expected to be appreciably influenced by their health. These results suggest an important boundary condition for the previous finding showing a negative relationship between work overload and expected retirement age (Jacobson, 1972). Specifically, work overload may not be a significant predictor of retirement intention in jobs that are not highly physically demanding. Alternatively, the lack of support for the relationship between work overload and retirement may be due to the improvement of emotion regulation with age (Blanchard-Fields, 2007). The enhanced emotion regulation of older adults may buffer the negative effects of work overload on self-efficacy judgments and work-related feelings of stress. Further research is needed to investigate the potential moderating influence of job demand and emotion regulation on the relationship between abilities-demands fit and retirement intention.

The finding that work match and work underload were positively related to years until retirement was also unexpected. This result directly opposes the hypothesis made

by Avolio, Waldman, and McDaniel (1990) that work underload would lead to boredom and lack of motivation and subsequently consideration of retirement. As suggested previously, the findings of this study may be related to the sample, which consisted of highly educated individuals engaged in knowledge work and management roles rather than the blue collar jobs. The importance of work match and work underload for predicting retirement intentions, compared to work overload, may be unique to jobs in the knowledge sector, where opportunities for skill utilization promote positive self-concept and may motivate individuals to remain at work. Additional research among knowledge workers to examine the work underload construct and its relation to retirement and turnover intentions across the life span is needed. Considering the results regarding age and abilities-demands fit, organizations should attempt to identify and make the most of the knowledge, skills and abilities of older workers, and at the same time call attention to the important role of older workers as individuals with valuable experience. By doing so, organizations may be able to defer the age at which it is generally viewed as being appropriate to retire while promoting the self-efficacy of older workers thereby encouraging older workers to postpone retirement. The findings from a phone survey conducted by the Employee Benefit Research Institute (2010a) suggest that such an intervention may be effective in encouraging older workers to delay retirement. Of the 4,981 retirees surveyed (3,321 engineering/technical retirees and 1,660 retirees in other occupations), 48% reported that being told by their employer that they were needed for an assignment would have very effective to extremely effective in persuading them to postpone retirement. Seventy-two percent of respondents who ranked this intervention as

being one of the top two most effective interventions stated that being told they were needed might have prompted them to remain two or more years with the organization.

Perhaps the most surprising result of this study was the failure to provide support for the hypothesized positive relationship between perceived needs-supplies fit and expected years until retirement. Consistent with the work motivation framework outlined by Kanfer and Ackerman (2004), I expected that perceptions of the job as providing adequate intrinsic and extrinsic rewards would lead to higher motivation to continue employment. There are a few possible reasons for the lack of a significant relationship between needs-supplies fit and retirement intention. One potential explanation relates to the exceptional economic condition weakening the relationship between needs-supplies fit and retirement intention. The severe economic downturn likely aroused fears among workers of all ages, but particularly older adults, regarding their financial future and subsequently minimized the overall importance of obtaining a good needs-supplies fit.

Another reasonable and potentially interesting explanation stems from findings obtained in the broader study that although needs-supplies fit was not significantly related to years of expected continued tenure, it was significantly related to turnover intention. Compared to individuals with better needs-supplies fit, individuals with poorer needs-supplies fit reported contemplating quitting their job more frequently, but did not report fewer expected years of continued work at their current organization. This finding suggests a possible disconnect between the desires of the individual to leave an organization and the ability to do so. Consequently, the influence of needs-supplies fit may be more apparent in the prediction of desired retirement intention rather than

planned retirement intention. In other words, despite being unrelated to expected retirement age, needs-supplies fit may be significantly related to desired retirement age. Indeed, desired retirement age is potentially an important variable as it may better reflect work motivation compared to expected retirement age, which is bound by logistical constraints. Therefore, future studies should consider the measurement of both expected retirement age and desired retirement age.

As previously mentioned, age accounted for a large portion of the variance in years until expected retirement. Indeed, the post hoc hierarchical regression analysis revealed that beyond age, health and finances, the P-E fit variables (abilities-demands fit and needs-supplies fit) accounted for only an additional 3% of the variance in years until expected retirement. This may call into question the meaningfulness of the incremental predictive validity of P-E fit. However, given the high cost associated with an experienced worker leaving an organization (Kooij, De Lange, Jansen, Kanfer, & Dijkers, in press), even small improvements in predictive validity may be worthwhile. Tziner and Birati (in press; 1996) outlined the costs of turnover for an organization, which are likely comparable to the costs of retirement for an organization. In particular, the direct costs of turnover Tziner and Birati (1996) identified include recruiting, hiring, training and socializing a new employee. The indirect costs of turnover come from any disruptions in production, sales or other delivery of goods and services to a client caused by the withdrawal of the worker. Tziner and Birati (in press; 1996) also noted another potential setback relates to the decline in the job performance of the remaining workers as a result of lowered morale. Consequently, the cost of an experienced worker retiring

potentially dwarfs the cost of improving P-E fit which may influence the worker to remain longer with the organization, particularly if it simply involves communicating to the worker his/her value to the organization.

The expected negative effect that the economic downturn had on the retirement plans led me to also investigate coping with retirement delay. Based on the assumption that longer retirement delays would cause greater stress, it was proposed that longer retirement delays would lead to greater intensity in coping activities. However, it was found that the length of the retirement postponement was not significantly related to the intensity of coping. It may be that individuals facing retirement delay of any length do not significantly vary in terms of the level of stress they experience and consequently do not significantly vary in terms of the intensity of their coping. Another possibility is that the coping was not adequately assessed considering the actual reliability of the measure for avoidant coping was less than the expected reliability (.52 vs. .70), which was calculated a priori using the Spearman-Brown prophecy formula. An improvement in the coping measure could potentially reveal a significant relationship between retirement delay and coping. This low correlation between length of retirement delay and coping may also be simply be due to the low variance in retirement delay ($SD = 1.90$).

Limitations of the Study

An important limitation of this study pertains to the use of a cross-sectional rather than longitudinal research design, which meant the retirement intention rather than actual retirement was used as the criterion. It may be the case that the expected retirement age and the actual retirement age are not equivalent. Additionally, the methodology used in

this study does not allow for the determination of causality. For example, it cannot be established using a cross-sectional design whether poor needs-supplies fit leads to the intention to retire or the intention to retire leads to poor needs-supplies fit. Therefore, future research should employ a longitudinal design.

A related concern pertains to the potential influence of common method bias, since the measures are self-report and the predictor and criterion measures are collected at the same time. Common method bias is a concern in organizational research; however, the analysis by Doty and Glick (1998) have found that the effects of common method bias are not strong enough to invalidate research findings and conclusions. Nonetheless, one precaution that was implemented in this study in order to minimize this potential bias was to separate the predictor and criterion measures with other measures unrelated to this study. For example, the measure of the main criterion variable (i.e., current retirement intention) was placed at the onset of the survey while the measures of the hypothesized predictor variables (abilities-demands fit and needs-supplies fit) were placed in a subsequent section of the survey. Assessing the retirement intentions prior to assessing perceptions of P-E fit should have reduced any unintended salience effects of these predictors on criterion measure. Ideally, a multi-wave and/or a multi-source measurement of the key variables would be obtained. For example, the predictor and criterion measure could be administered at different periods of time. Also, job performance ratings may be utilized to provide additional information about a worker's ability to meet the demands of his/her job. Even so, findings of this study provided evidence that could be used to justify further more extensive and expensive research

efforts to assess this class of retirement intention determinants.

Another limitation of the research pertains to the use of a sample with the same educational background in engineering. The determinants of retirement intentions among individuals with an engineering background may differ from those of individuals with other backgrounds, such as business. However, surveying a sample based on educational background rather than based on current job permitted the investigation of the determinant of retirement intentions across a broader array of jobs. Additionally, the high cognitively-demanding and low physically-demanding white-collar jobs held by this sample are characteristic of the occupations of today and of the future (Bureau of Labor Statistics, 2004). Finally, the sample is also limited in terms of its primarily consisting of men. As a result, it was not possible to investigate potential gender differences in predictors of retirement intention. Overall, a more heterogeneous sample would be needed to enhance the generalizability of the findings of this study.

An additional limitation of this study pertains to measurement issues. Time constraints did not permit the use of full scales for many variables. Although care was taken in writing items and creating shortened versions of previously established measures, internal reliability consistency estimates of the finance and coping measures were less than expected, as calculated using the Spearman-Brown prophecy formula. The inclusion of additional items can be expected to increase the internal consistency reliability estimates of these scales. Further attention is also needed with respect to the abilities-demands fit measure. In particular, the results of structural equation modeling indicated that the dimensions of this variable referred to relative level of abilities and

demands (i.e., work overload, work underload, and work match) rather than to work demand type. This underlying structure was also found with the more commonly used exploratory factor analysis. The fact that work underload and work overload were unrelated ($r = -.03$) rather than negatively related may imply that the items from these subscales may have tapped into other aspects of P-E fit aside from abilities-demands fit. The effort made in this study to create items that assessed individuals' perceived ability to meet specific demands of their job may have resulted in items from the work underload scale being more precisely a measure of self-efficacy while items from the work overload scale being more precisely a measure of challenging job characteristics. As such, individuals could conceivably score highly on both subscales by reporting that they perceive their work to be difficult, but are confident in their ability to perform it well. In order to more accurately measure work overload and work underload, more parallel items may be needed. Furthermore, the results of regression analyses indicated the predictive validities for these factors on retirement intentions differed. Future research examining the dimensionality of abilities-demands fit appears warranted.

Contributions of the Research

A review of the literature showed, to date, there has been little attention given to the extent to which an individual's perceptions of P-E fit contribute to retirement intentions. The results of this study provided information regarding the influence of perceived fit on retirement intentions, beyond that of chronological age, health, and finances. The findings of this study provided partial support for the proposition made by Kanfer and Ackerman (2004) that abilities-demands fit affects motivation for continued

employment. In contrast to prior findings, the results of this study showed that work overload did not exert a significant influence on retirement intentions. Rather, I found that work underload and work match were related to extended time in the workforce. If it is the case that the disparity between the past and present findings is due to the use of a sample of white collar workers in the current study, this would suggest that, for more highly educated professionals, work motivation and retirement intention may more likely be affected by affordance factors (e.g., opportunity for skill utilization) than constraint factors (e.g., inability to keep up with pace of work demands). Accordingly, interventions that promote affordances and interventions that mitigate constraints may be differentially effective in delaying retirement. Longitudinal field research to investigate the relative effectiveness of constraint-based and affordance-based interventions across an array of job sectors is an important next step.

REFERENCES

- Abdel-Halim, A. A. (1981). A reexamination of ability as a moderator of role perceptions--satisfaction relationship. *Personnel Psychology*, 34(3), 549-561.
- Adams, G. A. (1999). Career-related variables and planned retirement age: An extension of Beehr's model. *Journal of Vocational Behavior*, 55(2), 221-235.
- Adams, G. A., & Beehr, T. A. (1998). Turnover and retirement: A comparison of their similarities and differences. *Personnel Psychology*, 51(3), 643-665.
- Adams, G. A., Prescher, J., Beehr, T. A., & Lepisto, L. (2002). Applying work-role attachment theory to retirement decision-making. *International Journal of Aging & Human Development*, 54(2), 125-137.
- Ashforth, B. E., & Humphrey, R. H. (1993). Emotional labor in service roles: The influence of identity. *Academy of Management Review*, 18(1), 88-115.
- Avolio, B. J., Waldman, D. A., & McDaniel, M. A. (1990). Age and work performance in nonmanagerial jobs: The effects of experience and occupational type. *Academy of Management Journal*, 33(2), 407-422.
- Beehr, T. A. (1986). The process of retirement: A review and recommendations for future investigation. *Personnel Psychology*, 39(1), 31-55.
- Beehr, T. A., Glazer, S., Nielson, N. L., & Farmer, S. J. (2000). Work and nonwork predictors of employees' retirement ages. *Journal of Vocational Behavior*, 57(2), 206-225.
- Bell, D., & Marclay, W. (1987). Trends in retirement eligibility and pension benefits, 1974-83. *Monthly Labor Review*, 110(4), 18.
- Birdi, K., Warr, P., & Oswald, A. (1995). Age differences in three components of employee well-being. *Applied Psychology: An International Review*, 44(4), 345-373.
- Blanchard-Fields, F. (2007). Everyday Problem Solving and Emotion: An Adult Developmental Perspective. *Current Directions in Psychological Science*, 16(1), 26-31. doi: 10.1111/j.1467-8721.2007.00469.x
- Brougham, R. R., & Walsh, D. A. (2005). Goal expectations as predictors of retirement intentions. *International Journal of Aging & Human Development*, 61(2), 141-160.
- Bureau of Labor Statistics. (2004). Trends in job demands among older workers, 1992-2002. Retrieved January 19, 2009 <http://www.bls.gov/news.release/pdf/jolts.pdf>
- Bureau of Labor Statistics. (2009). Job openings and labor turnover: November 2008. Retrieved January 19, 2009 <http://www.bls.gov/news.release/pdf/jolts.pdf>
- Bureau of Labor Statistics. (2010a). Labor force statistics from the Current Population Survey. http://data.bls.gov/PDQ/servlet/SurveyOutputServlet?data_tool=latest_numbers&series_id=LNS14000000
- Bureau of Labor Statistics. (2010b). Occupational Outlook Handbook, 2010-11 Edition. Retrieved April 13, 2010 <http://www.bls.gov/oco/ocos108.htm>
- Burgess, D. (2005). What motivates employees to transfer knowledge outside their work

- unit? *Journal of Business Communication*, 42(4), 324-348.
- Cannon, W. B. (1929). Organization for physiological homeostasis. [Review]. *Physiological Reviews*, 9(3), 399-431.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54(3), 165-181.
- Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, 4(1), 92-100.
- Cattell, R. B. (1943). The measurement of adult intelligence. *Psychological Bulletin*, 40(3), 153-193.
- Center for Disease Control. (2008). Life expectancy at birth, at 65 and 75 years of age by race and sex. Retrieved April 12, 2010
<http://www.cdc.gov/nchs/fastats/lifexpect.htm>
- Charles, K. K. (2004). The extent and effect of employer compliance with the accommodations mandates of the Americans with Disabilities Act. *Journal of Disability Policy Studies*, 15(2), 86-96.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499-512.
- Dendinger, V. M., Adams, G. A., & Jacobson, J. D. (2005). Reasons for working and their relationship to retirement attitudes, job satisfaction and occupational self-efficacy of bridge employees. *International Journal of Aging & Human Development*, 61(1), 21-35.
- Dewe, P. J., & Guest, D. E. (1990). Methods of coping with stress at work: A conceptual analysis and empirical study of measurement issues. *Journal of Organizational Behavior*, 11(2), 135-150.
- Diefendorff, J. M., & Richard, E. M. (2003). Antecedents and consequences of emotional display rule perceptions. *Journal of Applied Psychology*, 88(2), 284-294.
- Doty, D. H., & Glick, W. H. (1998). Common methods bias: Does common methods variance really bias results? *Organizational Research Methods*, 1(4).
- Edwards, J. R. (1988). The determinants and consequences of coping with stress. In C. L. Cooper & R. Payne (Eds.), *Causes, coping and consequences of stress at work* (pp. 233-263). New York: John Wiley & Sons.
- Edwards, J. R. (1998). Cybernetic theory of stress, coping and well-being: Review and extension to work and family. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 122-152). New York: Oxford University Press.
- Elovainio, M., Forma, P., Kivimäki, M., Sinervo, T., Sutinen, R., & Laine, M. (2005). Job demands and job control as correlates of early retirement thoughts in Finnish social and health care employees. *Work & Stress*, 19(1), 84-92.
- Erikson, E. H. (1964). *Childhood and society*. New York: Norton.
- Feldman, D. C. (1994). The decision to retire early: A review and conceptualization. *Academy of Management Review*, 19(2), 285-311.
- French, J. R. P., Rodgers, W., & Cobb, S. (1974). Adjustment as person-environment fit.

- In G. V. Coelho, D. A. Hamburg & J. E. Adams (Eds.), *Coping and adaptation* (pp. 316-333). New York: Basic Books, Inc.
- George, L. K., Fillenbaum, G. G., & Palmore, E. B. (1984). Sex differences in the antecedents and consequences of retirement. *Journal of Gerontology*, 39(3), 364-371.
- Gustman, A. L., & Steinmeier, T. L. (1984). Partial retirement and the analysis of retirement behavior. *Industrial & Labor Relations Review*, 37(3), 403-415.
- Hackman, J. R., & Oldham, G. R. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology*, 60(2), 159-170.
- Hansson, R. O., DeKoekkoek, P. D., Neece, W. M., & Patterson, D. W. (1997). Successful aging at work: Annual review, 1992-1996: The older worker and transitions to retirement. *Journal of Vocational Behavior*, 51(2), 202-233.
- Harris, P. E. (1989). The nurse stress index. *Work & Stress*, 3, 335-345.
- Herz, D. E. (1995). Work after early retirement: An increasing trend among men. *Monthly Labor Review*, 118(4), 13.
- Hochschild, A. (1983). *The managed heart: Commercialism of human feeling*. Berkeley: University of California Press.
- Hu, L.-t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55.
- Ilmarinen, J. E. (2001). Aging workers. *Occupational and Environmental Medicine*, 58(8), 546-552.
- Jacobson, D. (1972). Willingness to retire in relation to job strain and type of work. *Industrial Gerontology*, 65-74.
- Jones, F., & Bright, J. (2001). *Stress: Myth, theory, and research*. New York: Pearson Education.
- Joulain, M., Mullet, E., Lecomte, C., & Prevost, R. (2000). Perception of 'appropriate' age for retirement among young adults, middle-aged adults, and elderly people. *International Journal of Aging & Human Development*, 50(1), 73-84.
- Kalleberg, A. L., & Loscocco, K. A. (1983). Aging, values, and rewards: Explaining age differences in job satisfaction. *American Sociological Review*, 48(1), 78-90.
- Kanfer, R. (1987). Task-specific motivation: An integrative approach to issues of measurement, mechanisms, processes, and determinants. *Journal of Social & Clinical Psychology*, 5(2), 237-264.
- Kanfer, R., & Ackerman, P. L. (2000). Individual differences in work motivation: Further explorations of a trait framework. *Applied Psychology: An International Review*, 49(3), 470-482.
- Kanfer, R., & Ackerman, P. L. (2004). Aging, adult development, and work motivation. *Academy of Management Review*, 29(3), 440-458.
- Kanfer, R., & Ackerman, P. L. (2007). Aging and work motivation. In C. Wankel (Ed.), *Handbook of 21st Century Management*. New York, NY: Sage Publications, Inc.
- Kooij, D., De Lange, A. H., Jansen, P. G. W., Kanfer, R., & Dikkers, J. (in press). Age and work-related motives: Results of a meta-analysis. *Journal of Organizational*

Behavior.

- Latack, J. C. (1986). Coping with job stress: Measures and future directions for scale development. *Journal of Applied Psychology*, 71(3), 377-385.
- Latack, J. C., & Havlovic, S. J. (1992). Coping with job stress: A conceptual evaluation framework for coping measures. *Journal of Organizational Behavior*, 13(5), 479-508.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company, Inc.
- Lundberg, U. (2002). Psychophysiology of work: Stress, gender, endocrine response, and work-related upper extremity disorders. *American Journal of Industrial Medicine*, 41(5), 383-392.
- Lupien, S. J., Fiocco, A., Wan, N., Maheu, F., Lord, C., Schramek, T., & Tu, M. T. (2005). Stress hormones and human memory function across the lifespan. *Psychoneuroendocrinology*, 30(3), 225-242.
- Manheimer, R. (2004). Rope of ashes: Global aging, generativity, and education. In E. de St. Aubin, D. P. McAdams & T.-C. Kim (Eds.), *The generative society: Caring for future generations*. (pp. 115-130): American Psychological Association.
- McAdams, D. P., de St. Aubin, E., & Logan, R. L. (1993). Generativity among young, midlife, and older adults. *Psychology and Aging*, 8(2), 221-230.
- McNamara, T. K., & Williamson, J. B. (2004). Race, gender, and the retirement decisions of people ages 60 to 80: Prospects for age integration in employment. *International Journal of Aging & Human Development*, 59(3), 255-286.
- Mears, A., Kendall, T., Katona, C., Pashley, C., & Pajak, S. (2004). Retirement intentions of older consultant psychiatrists. *Psychiatric Bulletin*, 28(4), 130-132.
- Mor-Barak, M. (1995). The meaning of work for older adults seeking employment: The Generativity factor. *International Journal of Aging & Human Development*, 41(4), 325-344.
- Mosisa, A., & Hipple, S. (2006). Trends in labor force participation in the United States. *Monthly Labor Review*, 129(10), 35.
- Mottaz, C. J. (1987). Age and work satisfaction. *Work and Occupations*, 14(3), 387-409.
- Murphy, K. R. (1989). Is the relationship between cognitive ability and job performance stable over time? *Human Performance*, 2(3), 183-200.
- Mutran, E. J., Reitzes, D. C., & Fernandez, M. E. (1997). Factors that influence attitudes toward retirement. *Research on Aging*, 19(3), 251-273.
- O*NET. (2009a). 13-2011.01 - Accountants. Retrieved April 13, 2010
<http://online.onetcenter.org/link/details/13-2011.01>
- O*NET. (2009b). 33-2011.01 - Municipal Fire Fighters. Retrieved April 13, 2010
<http://online.onetcenter.org/link/details/33-2011.01>
- Park, D. C. (1994). Aging, cognition, and work. *Human Performance*, 7(3), 181-205.
- Pew Research Center. (2009). America's changing workforce: Recession turns a graying office grayer. Retrieved December 10, 2009
<http://pewsocialtrends.org/assets/pdf/americas-changing-workforce.pdf>
- Purcell, P. J. (2000). Older workers: employment and retirement trends. *Monthly Labor*

- Review*, 123(10), 19.
- Reitzes, D. C., Mutran, E. J., & Fernandez, M. E. (1998). The decision to retire: A career perspective. *Social Science Quarterly*, 79(3), 607-619.
- Sattler, J. M. (1982). Age effects on Wechsler Adult Intelligence Scale-Revised tests. *Journal of Consulting and Clinical Psychology*, 50(5), 785-786. doi: 10.1037/0022-006x.50.5.785
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293-315.
- Schmitt, N., Coyle, B. W., Rauschenberger, J., & White, J. K. (1979). Comparison of early retirees and nonretirees. *Personnel Psychology*, 32(2), 327-340.
- Schmitt, N., & McCune, J. T. (1981). The relationship between job attitudes and the decision to retire. *Academy of Management Journal*, 24(4), 795-802.
- Schneider, B. (1987). The people make the place. *Personnel Psychology*, 40(3), 437-453.
- Shimazu, A., & Kosugi, S. (2003). Job stressors, coping, and psychological distress among Japanese employees: interplay between active and non-active coping. *Work & Stress*, 17(1), 38-51.
- Shultz, K. S., Morton, K. R., & Weckerle, J. R. (1998). The influence of push and pull factors on voluntary and involuntary early retirees' retirement decision and adjustment. *Journal of Vocational Behavior*, 53(1), 45-57.
- Stankov, L. (1988). Aging, attention, and intelligence. *Psychology and Aging*, 3(1), 59-74. doi: 10.1037/0882-7974.3.1.59
- Sterns, H. L., & Miklos, S. M. (1995). The aging worker in a changing environment: Organizational and individual issues. *Journal of Vocational Behavior*, 47(3), 248-268.
- The Economist. (2008a, October 9). A survey of the world economy: When fortune frowned, *The Economist*. Retrieved from http://www.economist.com/specialreports/displaystory.cfm?story_id=12373696
- The Economist. (2008b, December 4). Where have all your savings gone?, *The Economist*. Retrieved from http://www.economist.com/opinion/displaystory.cfm?story_id=12724822
- The Economist. (2009, January 6). Booms and busts, *The Economist*. Retrieved from http://www.economist.com/daily/chartgallery/displaystory.cfm?story_id=12811306&fsrc=rss
- Toossi, M. (2006). A new look at long-term labor force projections to 2050. *Monthly Labor Review*, 129(11), 19-39.
- Tziner, A., & Birati, A. (1996). Assessing employee turnover costs: A revised approach. *Human Resource Management Review*, 6(2), 113-122. doi: 10.1016/s1053-4822(96)90015-7
- Urban Institute. (2009). It's not easy being gray: The new rules of retirement. Retrieved December 10, 2009 http://www.urban.org/UploadedPDF/411840_rules_of_retirement.pdf
- Wang, M., & Shultz, K. S. (2010). Employee Retirement: A Review and

- Recommendations for Future Investigation. [Review]. *Journal of Management*, 36(1), 172-206. doi: 10.1177/0149206309347957
- Warr, P. (1994). Age and employment. In H. C. Triandis, M. D. Dunnette & L. M. Hough (Eds.), *Handbook of Industrial and Organizational Psychology* (Vol. 4, pp. 485-550). Palo Alto, CA: Consulting Psychologists Press, Inc.
- Warr, P. (2001). Age and work behavior: Physical attributes, cognitive abilities, knowledge, personality traits, and motives. *International Review of Industrial and Organizational Psychology*, 16, 1-36.
- Wiatrowski, W. J. (2001). Changing retirement age: ups and downs. *Monthly Labor Review*, 124(4), 3.
- Wolkowitz, O. M., Reus, V. I., Weingartner, H., & Thompson, K. (1990). Cognitive effects of corticosteroids. *American Journal of Psychiatry*, 147(10), 1297-1303.
- Young, A. H. (2004). Cortisol in Mood Disorders. *Stress: The International Journal on the Biology of Stress*, 7(4), 205-208.
- Zapf, D., Seifert, C., Schmutte, B., Mertini, H., & Holz, M. (2001). Emotion work and job stressors and their effects on burnout. *Psychology & Health*, 16(5), 527-545.
- Zapf, D., Vogt, C., Seifert, C., Mertini, H., & Isic, A. (1999). Emotion work as a source of stress: The concept and development of an instrument. *European Journal of Work and Organizational Psychology*(8), 371-400.